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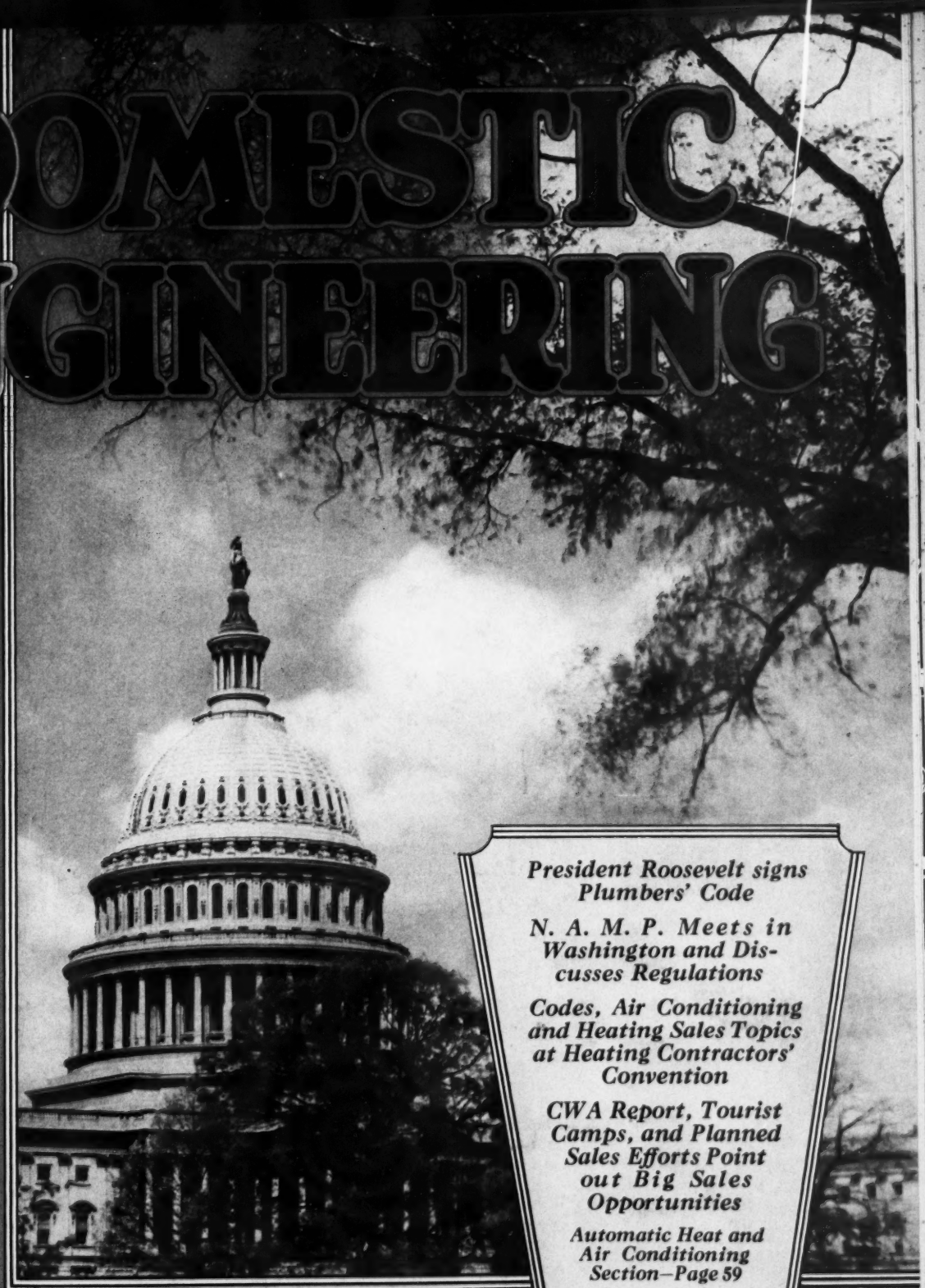
# DOMESTIC ENGINEERING



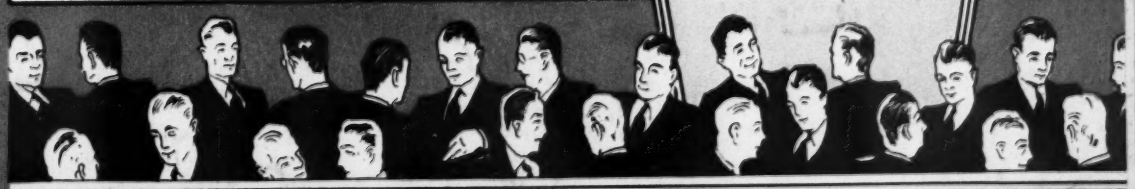
*President Roosevelt signs Plumbers' Code*

*N. A. M. P. Meets in Washington and Discusses Regulations*

*Codes, Air Conditioning and Heating Sales Topics at Heating Contractors' Convention*

*CWA Report, Tourist Camps, and Planned Sales Efforts Point out Big Sales Opportunities*

*Automatic Heat and Air Conditioning Section—Page 59*



JUNE
1934

*Plumbing & Heating Contracting and Merchandising*

# *More Selling Advantages with* RED JACKET *Water Systems*

**PUMPING UNITS AS LOW AS $41.25 F.O.B. DAVENPORT**

The Red Jacket line of Shallow Well Water Systems is the fastest selling line on the market today. These are a few of the advantages that account for sensational Red Jacket sales:

1. *Lowest priced* Shallow Well Water Systems.
2. Quiet, efficient performance.
3. Compact and attractive.
4. Economical to operate.
5. Gives years of trouble-free service.
6. Precision built with finest materials.
7. Every water system tested in Red Jacket testing laboratories.
8. An ironclad guarantee.

## DEALERS ACCLAIM

### Red Jacket Sensational Selling Line

Progressive dealers all over the country are swinging to Red Jacket because Red Jacket offers them more selling advantages. Red Jacket deep well and shallow well water systems are not only the finest that can be built, but are low priced. This means quick sales and satisfied customers. Red Jacket's unchanged liberal dealer discounts insure largest profits.

Red Jacket offers a complete line of water systems backed by years of experience. Consider these facts:

1. 58 years experience in building pumps.
2. Shallow well water systems available in 250 gal., 350 gal., and 500 gal. per hour capacity.
3. Complete line of deep well water systems up to 10,000 gal. per hour capacity.

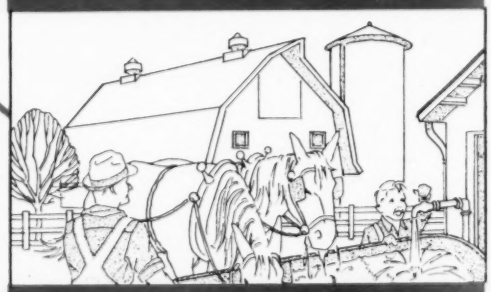
Investigate and see for yourself the many selling advantages of Red Jacket. Write for full dealers' proposition today.

**RED JACKET MANUFACTURING CO., Davenport, Iowa**

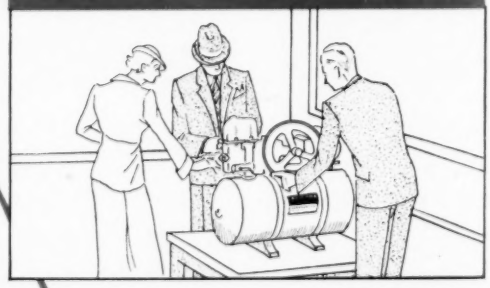
*Also complete line of hand, windmill and three-way pumps.*

**DORWARD** *Red Jacket*

**LOWEST PRICES TO THE CONSUMER**



**UNCHANGED LIBERAL DEALER DISCOUNTS**



## Send for Catalog

New catalog SW 87 shows Red Jacket complete line and low prices. Send for it.

**WATER SYSTEMS AND DEEP WELL POWER HEADS**

# This was a pleasant surprise!

When we sent out samples of folders and blotters on the new Vogel line, asking plumbers how many they could use, we not only received a flood of requests, but many letters telling us how plumbers liked to sell and install Vogel Products. Excerpts from two are given below.

"Father sold and installed Vogel Products when we were kids and we are still selling them, for two reasons: one is the splendid co-operation in advertising helps, and the other is that Vogel Products 'stay put' after they are installed. We have very few service calls for adjustments."

JOHN W. MILLER
Clarence Miller & Sons
Lebanon, Indiana

"I have installed quite a few of the No. 1 Frost-Proof Closets, and never have had a bit of trouble. We deem it a pleasure to install the Vogel, for its neatness and satisfactory service."

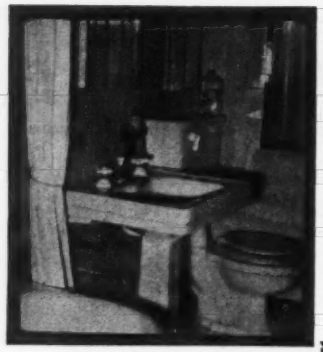
C. D. ELLSWORTH
Ellsworth Plumbing Company
Portsmouth, Virginia

The Vogel Number Four Frost-Proof Closet —with a vitreous china bowl and top inlet. Can never freeze and looks as good as a bathroom closet.

*Do you have a supply of these folders and blotters to send to your customers? Plumbers who are using them are making plenty of profits installing Vogel Frost-Proof Closets and Hydrants.*

JOSEPH A. VOGEL COMPANY
WILMINGTON, DEL. ST. LOUIS, MO.

**VOGEL** PATENTED **Frost-Proof Products**




# DOMESTIC ENGINEERING

*Plumbing & Heating Contracting & Merchandising*

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Whole No. 1995 — JUNE, 1934

WE DO OUR PART

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# *You will probably install a lot of showers this summer*

**—Make sure that your customers get complete satisfaction from them, by putting an Anystream Self-Cleaning Head on every one**

K-3395—SPEAKMAN Anystream Self-Cleaning Shower Head. (Pat. Jan. 2, 1923 and Nov. 3, 1931.)

★

K-7047—SPEAKMAN Adjusta-Spray Shower Head. (Pat. November 3, 1931, March 15, 1932, June 14, 1932.)

★

K-3601-M—SPEAKMAN Metaline Built-in Mixometer Shower. Size ⅜ inch. Mixometer with metal wall plate and metal handle. Bent arm with metal escutcheon, ball joint and Anystream Self-Cleaning Shower Head.

A SHOWER with an ordinary head cannot give complete satisfaction, because some members of the family prefer a rain-like shower, others want the water to flow over them gently, while still others delight in stinging needle baths.

The Speakman Anystream Self-Cleaning Head gives all of these shower conveniences by simply turning the lever handle — It has no holes to stop up! Tapered slots in the plungers of the head give full round unbroken streams — 48 of them.

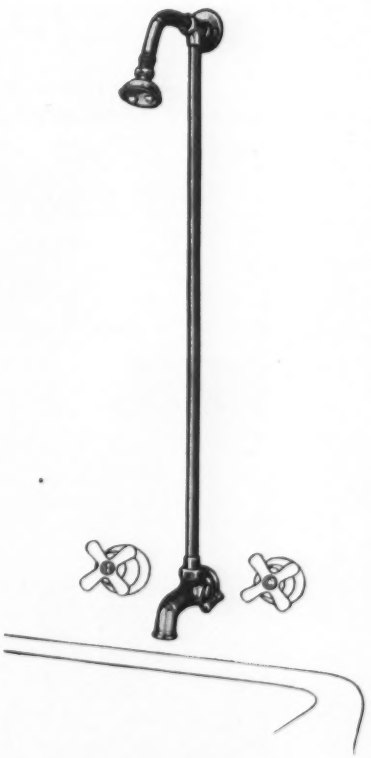
While Speakman Anystream Self-Cleaning Heads can be used on all makes of showers, still for *your own* complete satisfaction on every job, we recommend that you install showers which have renewable high seat valves, swivel disc, encased washers and full size waterways — finished in sparkling Chromium Plate which will never wear off.

These are Speakman Quality Showers, the kind you can install and forget.

***Literature on the Speakman Anystream Self-Cleaning Shower Head, its smaller brother, the Adjusta-Spray Head, and all types of Speakman Showers is available. Send this to your customers — imprinted with your name and address, of course.***

SPEAKMAN COMPANY
Wilmington, Delaware

★



K-2916-A—SPEAKMAN Trans-Nozzle Shower, with nozzle over tub. ⅜-inch inlet in nozzle. ½-inch riser pipe, adjustable wall support, bent arm, ball joint and Adjusta-Spray Shower Head. (For other types see our latest folder.)

★

K-2634-M—SPEAKMAN Built-in Metaline Heavyweight Shower. Size ½ inch. Hi-seat valves, with unions, renewable seats, metal escutcheons, and metal handles, with black enamel indexes. Bent arm with metal escutcheon, ball joint, and Speakman Anystream Self-Cleaning Shower Head.

**SPEAKMAN *Showers & Fixtures***

# Running Water

WEANED of pumping and carrying water by hand to the conveniences of running water at the turn of a faucet, that's the nation wide story of country home and farm modernization through the installation of Water Systems.

Thousands of such homes and farms have selected and are depending on Myers Self-Oiling Automatic Water Systems for their daily water supply. And this selection has not been restricted to homes and farms. Wherever the need, whatever the requirement, Myers Water Systems predominate. The reasons are obvious - - -

Myers Self-Oiling Automatic Water Systems for deep or shallow wells are quality built, dependable and low priced with style and capacity range for almost any service. From the smallest cottage to the largest suburban or country home or farm, for any service up to 10,000 gallons of water per hour, there is a dependable Myers Water System to fit the demand.

Running water is here to stay. The big selling season lies just ahead. Your inquiry will receive prompt attention.

THE F.E.MYERS & BRO. CO.
ASHLAND, OHIO.

Take Off Your Hat To The MYERS
PUMPS · WATER SYSTEMS · HAY TOOLS · DOOR HANGERS

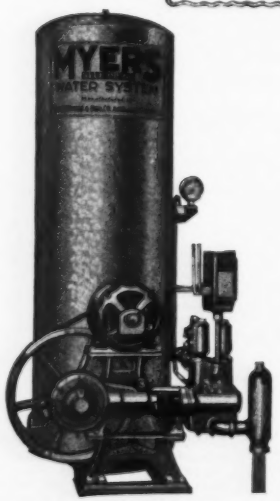



Fig. 2510

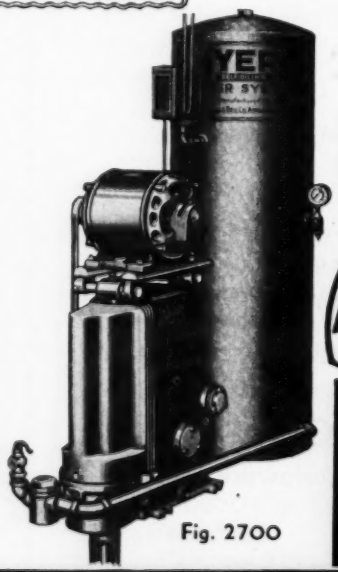


Fig. 2700

Farms
Schools
Ranches
Camp Sites
Cottages
Service Stations
Summer Homes
Rural Homes
Suburban Homes
Rural Churches
Country Estates
Dairies, Creameries
Institutions

MYERS WATER SYSTEMS

PUMPS – WATER SYSTEMS – HAY TOOLS – DOOR HANGERS

# PLUMBERS

## *Are Making Money!*

# "BRIGSTEEL"

## Means LARGER PROFITS to Master Plumbers and to Jobbers at LOWER PRICES to Consumers!

Master Plumbers and Jobbers everywhere are already making big profits on the new BRIGSTEEL sinks. Extreme beauty, plus distinctive, exclusive features never found before in any kitchen sink, are responsible for instant public approval. The customer pays *less* while the plumber and the jobber *make more!*

BRIGSTEEL sinks offer new eye-appeal, a merchandising set-up that will build volume for you right now and prices that make it possible for you to meet all competition.

*Write for Catalog and Complete Price List!*

**BRIGGS MANUFACTURING COMPANY**
DETROIT • • MICHIGAN

### MOTHER-OF-PEARL— An Exclusive Feature

People patronize the plumber who can show them a kitchen sink that is *different*—a sink that has Mother-of-Pearl trim, for instance —exclusive with BRIGSTEEL.

These beautiful sinks are 65% lighter in weight—they are stronger and more durably finished than any other sink in the same price class. They are the ideal sink for the finest home, yet they sell at prices that mean volume-business.

*A Complete Line . . . White Solid and Two-Tone Colors Available*

•

**ARMCO *Ingot Iron***

•

**ACID-RESISTING AT NO EXTRA COST**

# CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 2, No. 8


# SEE BIGGER '34 FAIR

## A Century of Progress Even More Magnificent

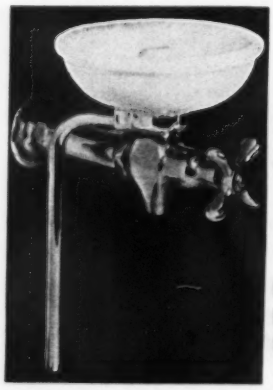
## NEW ATTRACTIONS

## A Veritable Laboratory for Plumbers

Opening of the 1934 A Century of Progress verified all predictions that it would be bigger, better, more colorful than in 1933.

For the plumber with an eye to what is new and better in his field, the 1934 Fair presents a vertitable laboratory of plumbing exhibits. Every plumber who can possibly get away for a few days should see it.

As for The Chicago Faucet Company's display, that too, in keeping with the general improvement throughout the Fair, has been greatly enhanced by the addition of new features. As last year, it is located in Home Planning Hall, and it is hoped that every reader of this magazine who attends the Fair will honor our exhibit with a visit.

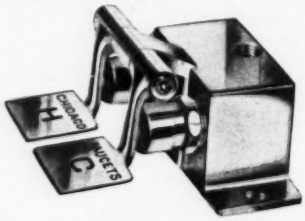


## *The* DUO-FLOW

**A New Single-Handled Combination Bubbler and Glass Filler**

Unique among specialties for this purpose, the Duoflow operates in both its functions by means of a single handle. It is, insofar as we know, the only single-handled combination unit. A slight turn of the handle in one direction operates the bubbler, and in the opposite direction the glass filler. Furnished regularly with round china bowl and bubbler nozzle, as shown. May also be had with elevated porcelain enameled octagonal, iron bowl and offset angle stream nozzle. Equally applicable to pressure water coolers or drinking fountains.

## A NEW "HIGH" IN PEDAL VALVE EFFICIENCY




Here is a pedal valve so sensitive and positive in its action, so simple, rugged, compact and trouble-free that it has proved a delight wherever used. Hospitals, doctors, dentists, barbers, beauticians everywhere are adopting it enthusiastically. It occupies, at its base, but 2¾x5¾ inches of floor space, with nothing imbedded *in* the floor but the anchoring screws or bolts. All wearing parts are embodied in working units, easily removable from the front. The valve closes *with* the pressure, as in all Chicago Faucets. Packing is under spring pressure, thus insuring against leaking. Furnished with either one or two pedals and with gooseneck spouts and nozzles to meet varying requirements.

## ADD-A-SHOWER IS A FAST-MOVING ITEM FOR SUMMER SALES

### Brownie Shower Head Aids in Its Success

Now, and from now on throughout the summer, is the time when the famous Add-a Shower sells like the proverbial hot cakes. The fact that it can be attached to the established faucet and anchored to the wall by merely setting two or three screws without any disturbance whatever to present arrangements, all at an extremely moderate cost, appeals strongly to householders, hotels, clubs and apartment building managers. And its famous Brownie Shower Head with its water-saving propensity, its self-cleansing feature and its exhilarating shower action insures complete satisfaction for every Add-a-Shower installation. Incidentally, the Brownie Shower Head is available separately and is in tremendous demand, especially in localities where water and fuel rates are high, because it saves from 25 to 50 per cent of water ordinarily required in shower bathing.

## FLEXROD POP-UP WASTE REPLACES PLUG AND CHAIN WITHOUT ANY CHANGE IN SLAB

The Flexrod Pop up Lavatory Waste, which operates by means of a bronze wire housed in a brass spring, is the only pop-up on the market which may be installed in place of old-style plug and chain wastes without any change whatever in the wash stand slab. It merely utilizes the hole for the bolt used to anchor the chain. Thus, for the first time, this substantial field for economical modernization is opened to the plumber. When ordering the Flexrod Waste for this particular purpose, specify No. 644.

## No. 444 MOST POPULAR SINK FAUCET

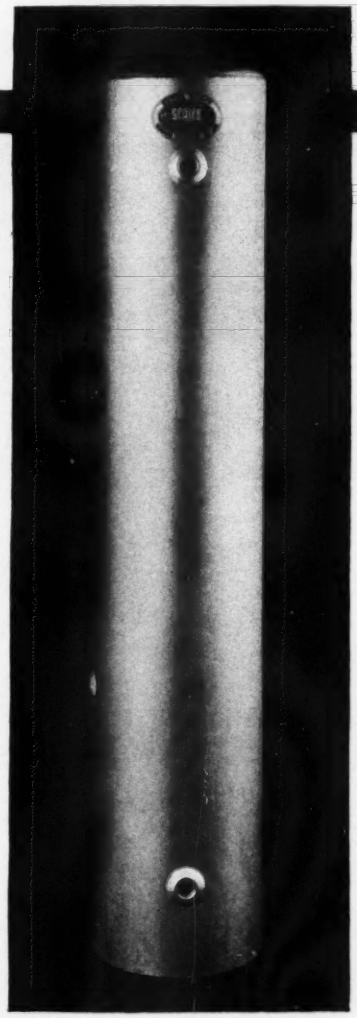
This fine Quaturn Classic is probably the most popular sink faucet in the quality field. And no wonder, for, considering its moderate price, it is an outstanding value. Its beauty of line, all-metal construction, side handles, swinging overhead spout high enough for filling deep vessels, are features which appeal instantly to householders and apartment building managers. Adjustable supply arms for ½-inch or ¾ inch pipe on 8, 10 or 12-inch centers make it adaptable to any sink. It has, of course, the standard operating unit of all Chicago Faucets—monel seat and composition washer, the principal wearing parts, renewable in a minute.

## Remember—

- All the specialties mentioned on this page, together with many others in the Chicago Faucet line, are especially appropriate for summer selling. All are included in our current price list.

# THREE KINDS of prospects for EVERDUR Range Boilers

★ ★ ★



MOST salesmen of house equipment must be content with just one group of prospects. But you have *three* groups... all interested in the convenience *and the savings* of rust-free hot water. They are:

The homes with rusting range boilers. The homes with otherwise unsatisfactory heater tanks. And the homes with no hot water system at all.

To some of these live prospects now... and to others, week after week... you can sell storage tanks of *rustless* Everdur. Everdur is copper... scientifically alloyed to provide the strength and welding properties of steel! And it *cannot* rust! Home-owners appreciate this fact, for all of them want hot water that is rust-free... not only when the tank is new, but indefinitely.

Why don't you make a special drive for Everdur range boiler business this fall? Every installation that you sell increases your profits... and helps your reputation with the better and more desirable type of customers.

Remember that leading makers of automatic water heaters and range boilers standardize on Everdur for all their rust-proof models.

← All-welded storage tank (range boiler) of rust-proof Everdur, made by Wm. B. Scaife & Sons Co., Oakmont, Pa. Readily used with any type of independent water heater operated by gas, oil, coal or electricity, including ranges or furnaces.

**EVERDUR METAL**
"Everdur" is a registered trademark identifying products of The American Brass Company made from alloys of copper, silicon and other elements.

**THE AMERICAN BRASS COMPANY**
General Offices: Waterbury, Connecticut
*Offices and Agencies in Principal Cities*
In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ontario

ANACONDA
from mine to consumer

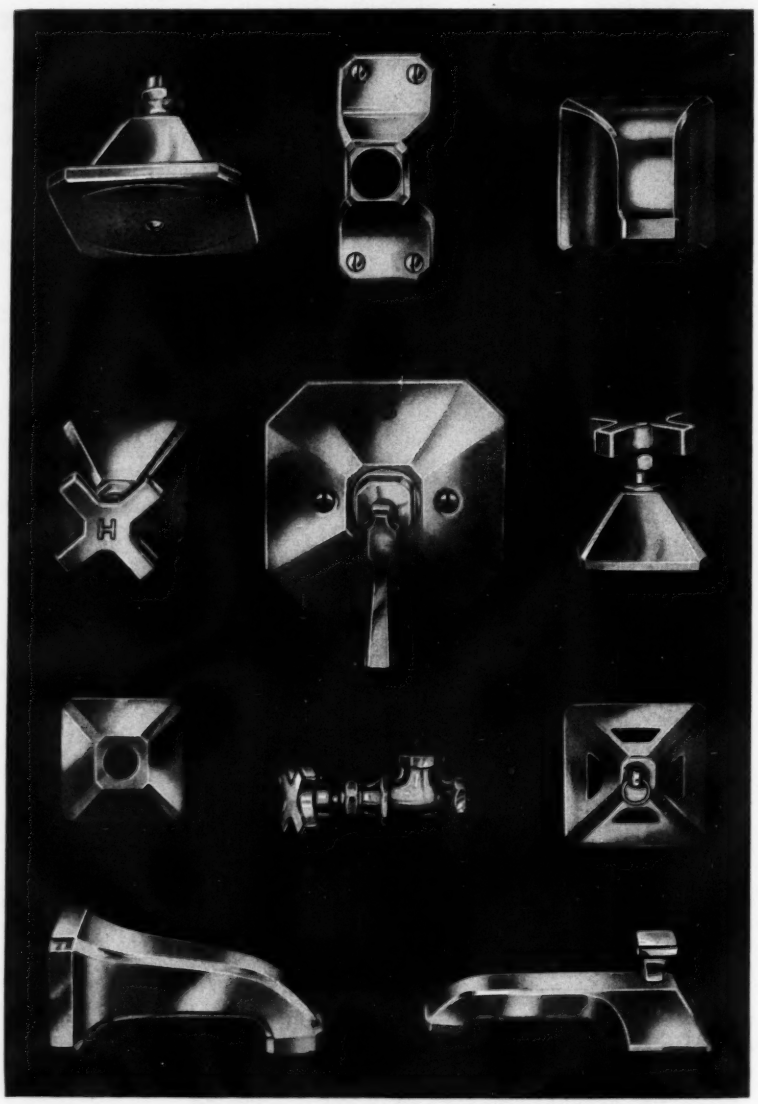
# EVERDUR METAL *for* TANKS

# GO OUT AND SELL
# MODERNIZATION
## ON A PRACTICAL SCALE

Plenty of your customers see the need—and have the urge—for bathroom modernization—but they're afraid of the cost of complete renovation. Old-fashioned bathrooms, outdated, worn fittings cause them trouble and embarrassment.

You'll find a lot of profitable business if you sell them the idea of partial modernization. Explain how new, modern fittings on tub, shower, basin and closet will brighten up an old-fashioned room. Tuck a set of dynamic, chromium-plated Vogue fittings—Scovill-made—under your arm, and sell them on appearance and trouble-free service. Show how they improve the appearance of an old tub or lavatory. Explain Scovill dependability and high quality.

Here's a sales tip: Once you get into a customer's bathroom, you're bound to make a sale if you can produce an idea. Sell practical modernization—easy, quick, and low in cost.



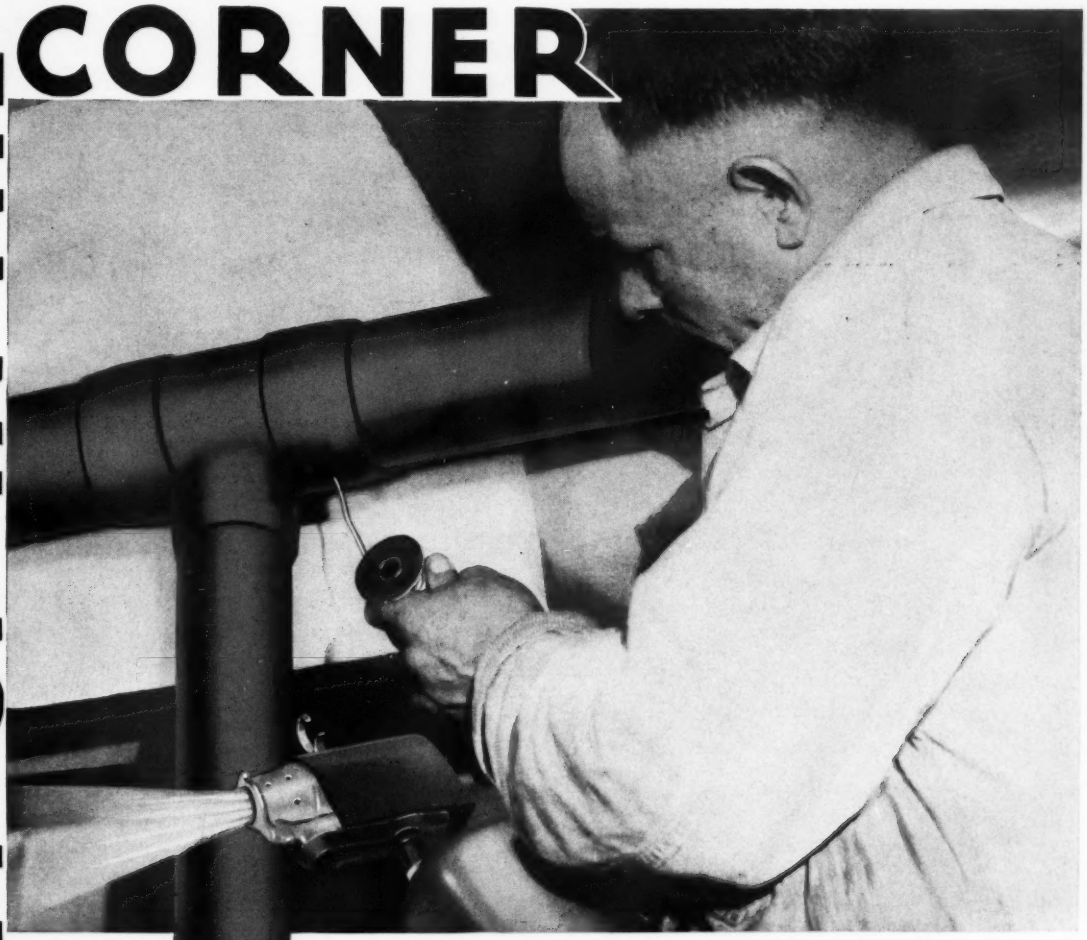
**Scovill Manufacturing Company**
PLUMBERS' BRASS GOODS DIVISION

**Waterville • Connecticut**

*Scovill Flush Valves, Shower, Bath and Lavatory Fittings. Miscellaneous Plumbers' Brass Goods*

# SCOVILL

# RIGHT UP IN THE CORNER



*Asbestos Sheet Used Back of Job Prevents Scorching*

## A PERFECT JOINT

One of the many advantages of STREAMLINE products is the fact that they require a very minimum of space. STREAMLINE Fittings, although producing enormously strong joints, are very little larger than the pipe lines which they connect. They do not protrude like screw type fittings. They can be readily installed close up to walls, ceilings, or partitions and in places otherwise inaccessible, because no room is required for wrench grip or wrench swing. The fitting is located exactly where required and soldered.

### *The Joint May Be Made From Any Position*

It does not make the slightest difference where the solder feed hole is located when making a connection, the solder will feed just as readily from the side or bottom as from the top. Capillarity always functions with the correct tolerance and cleaned, fluxed surfaces. THE PLUMBER CAN MAKE A PERFECT JOINT FROM ANY POSITION.

*Send for our Catalog F and Solder Instruction Card*

**STREAMLINE PIPE AND FITTINGS**
PORT HURON, MICHIGAN **CO.**
DIVISION OF MUELLER BRASS CO.

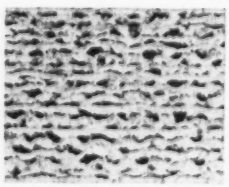
# AGAIN . . .

## Carey Pioneers with startling new INSULATION DEVELOPMENT!

# Careycel

**LOW TEMPERATURE ASBESTOS INSULATION**

## 30%
## HEAT SAVING IN SAME PRICE RANGE



*Above* — Actual photo of section of CAREYCEL Asbestos Insulation, showing unique construction of air spaces. CAREYCEL is the exclusive, patented product of The Philip Carey Co.

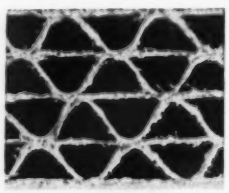


Photo of section of the ordinary Air Cell insulation. Rigid tests prove CAREYCEL reduces heat losses 30% over this type.

● Carey scores again! For 61 years a leader in the insulation field — always a pioneer in blazing new trails — Carey presents its latest achievement: CAREYCEL Asbestos Insulation for temperatures up to 300°F.

In certified tests by one of the foremost testing laboratories in the country, CAREYCEL demonstrated 30% reduction in heat losses over the widely used Air Cell insulation of the same thickness and in the same price range. Shrinkage (common in low pressure coverings) is negligible in CAREYCEL.

This improved product is now available for insulating piping, boilers, tanks, ovens, and other low-temperature apparatus.

CAREYCEL, with its new standard of efficiency, obsoletes previous low temperature insulations. Its use insures the most efficient results.

The man who pays the fuel bills will be quick to appreciate the savings of this improved product.

***Carey National Distribution Insures Prompt Service***

DEPARTMENT C

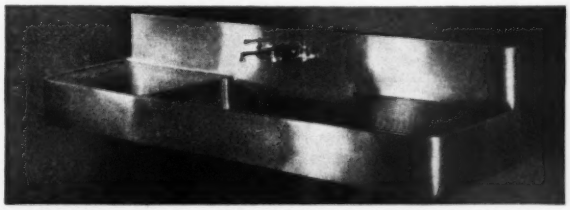
**THE PHILIP CAREY COMPANY**

MAIN OFFICES, LOCKLAND, CINCINNATI, OHIO

*Branches in Principal Cities*

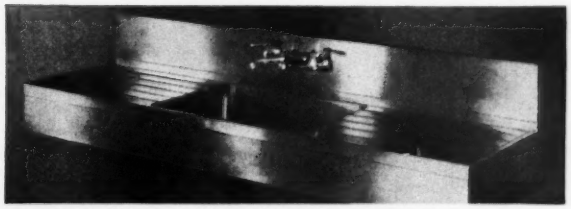
# *Assemble a* MONEL METAL *kitchen from* Standard Units

*INCO "Straitline" Monel Metal Cabinet Sink, with 8" back splasher.*



*INCO "Streamline" Monel Metal Kitchen Sink, double drainboard model.*

*INCO "Straitline" Monel Metal Cabinet Top, with 1½" integral back splasher.*



*INCO "Straitline" Monel Metal Kitchen Sink, double drainboard model.*

*"Whitehead" Automatic Gas Water Heaters are made in three types—all have Monel Metal Tanks. The "Whitehead" Monel Metal Hot Water Tank (Range Boiler) is made in three weights and several sizes—tested to 200 to 350 lbs. pressure.*

THE kind of gleamingly efficient kitchen that women-prospects yearn for is now a simple matter to assemble... and no longer a costly one.

A complete line of *standardized* Monel Metal kitchen equipment offers you stock models, immediately available at prices in reach of even modest building or remodeling budgets.

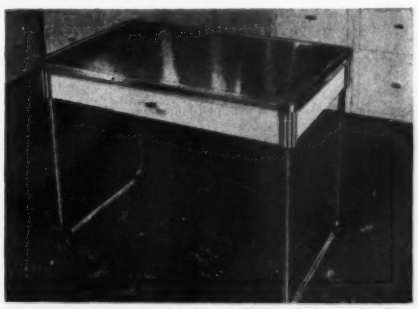
Monel Metal sinks and cabinet tops, in 57 *standardized* models and sizes, meet practically every possible kitchen layout.

There are also available Monel-topped gas ranges and tables, Monel hot water tanks (range boilers) and gas water heaters with Monel storage tanks.

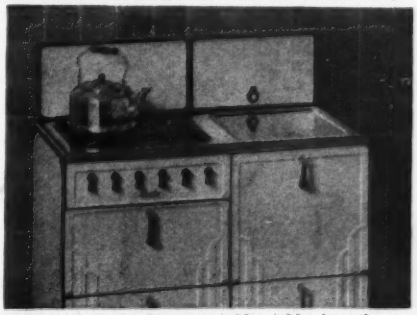
Seven years of continuous big space advertising, in the great national magazines, have built up a strong desire and demand for Monel-equipped kitchens... a demand that active plumbing contractors know can be turned into sales.

Write for information and our new, fully illustrated catalog "INCO Standard Monel Metal Sinks and Tops".

**THE INTERNATIONAL NICKEL CO., INC.**
**67 WALL STREET NEW YORK, N. Y.**



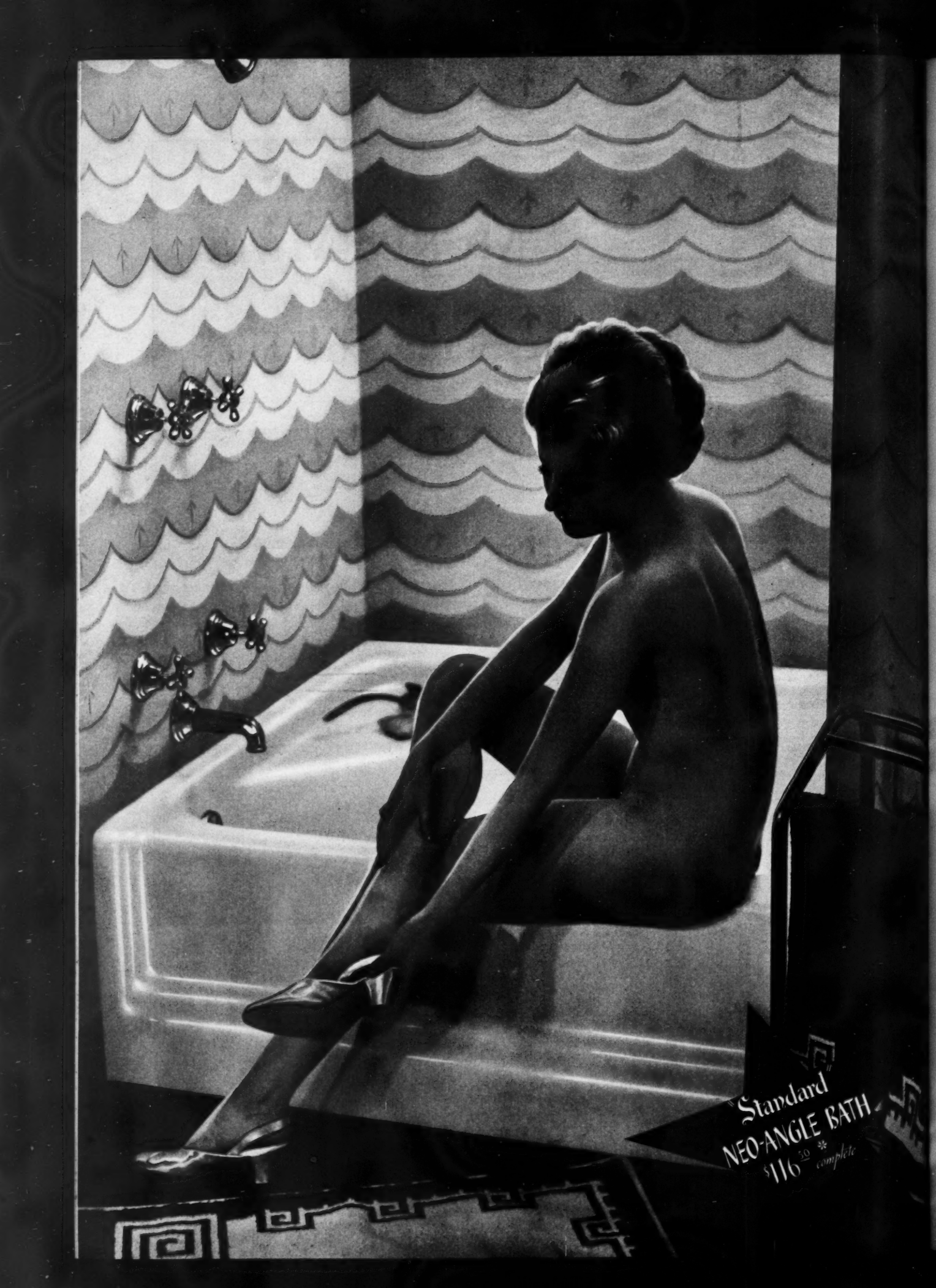
*The "Smartline" Monel Metal Table, designed by Ray Patten. Available in four colors—white, ivory, green or black and in three sizes: 20" x24"—24" x36" and 25" x40½".*



*"Magic Chef" Gas Range with Monel Metal top, burner pan and broiler pan grid.*

**Monel Metal**

See the INCO exhibit of MONEL METAL HOUSEHOLD APPLIANCES . . . at the Century of Progress, Chicago, 1934 Home Planning Hall

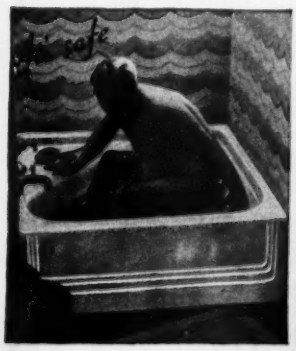

"Standard"
NEO-ANGLE BATH
$116.50 * complete

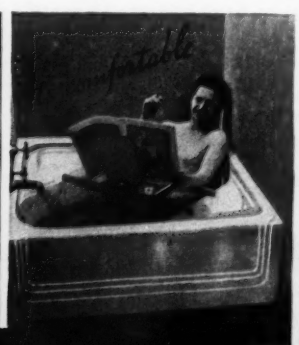
# America gets a new "Standard" of bathing comfort...

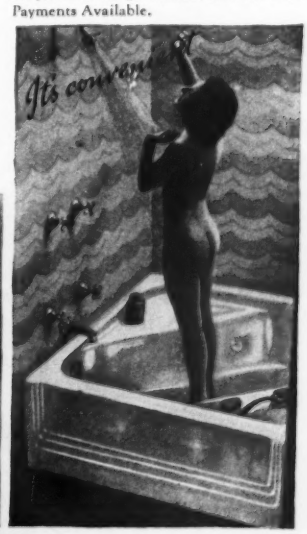
ALL "bath-conscious" America is talking about the sensational new "Standard" Neo-Angle Bath...its smart design...its convenient seats in opposite corners...its safety...its comfort...its roominess. It sets a new standard of bathing comfort and convenience. It provides every bathing feature in a single one-piece bath!

Soon, no bathroom will be really modern without a "Standard" Neo-Angle Bath. In white or any of ten attractive colors, it will create a new enthusiasm for better bathroom fixtures. It will revolutionize and modernize bathroom design. Prepare now for this great public interest. See this new bath now at the nearest "Standard" showroom or wholesale distributor. Write today for complete information and literature!

* Price includes bath in white regular enamel, complete with bath and shower fitting. Plus local delivery and installation by your registered master plumber. Price subject to change without notice. Time Payments Available.



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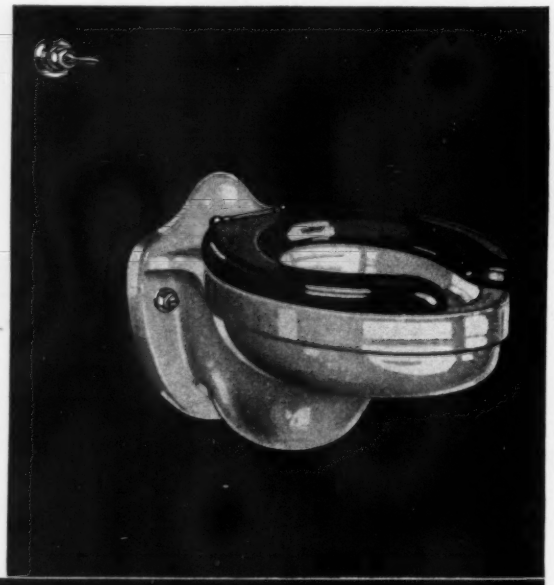
Pat. No. 1,844,988

**Standard Sanitary Mfg. Co.**

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

# This **LOW HEIGHT** bowl is *designed to* **TAKE CARE OF ITSELF!**



- This LOWALL closet can be used in connection with Crane HULBERT fittings . . . a combination of drainage elbow, tee Y and nipple cast in one piece.
- Entire horizontal drainage line is *above the floor.*
- Inlet to trapway is smaller than the trap itself!
- Twin jet action gives short, straight flush through trapway.

An ever-present trouble exists in school, factory and public washrooms . . . in ill-flushed bowls! But this low-height Crane LOWALL vitreous china blow-out wall closet is always ready for inspection . . . its *design* helps it take care of itself!

Here's why: when installed, the LOWALL measures only 13⅛" from floor to rim. This low height is a health feature recommended by the medical profession. The positive blow-out action gives a short, vigorous flush which cleans the bowl *properly* with less water . . . efficient cleaning always depends on the *velocity* of water through the trap-way.

The LOWALL reduces stoppage and fouling trouble in the washroom. The inlet to the trapway is smaller than the trapway itself . . . anything which can *enter* can *pass through!* Installation is easy, too . . . with Crane HULBERT fittings it is not necessary to pierce the concrete floor for each LOWALL closet outlet . . . the entire horizontal drainage line is *above the floor.* This makes false ceilings and extra deep floors unnecessary, saves the cost of metal floor sleeves.

Specify Crane LOWALL Closet for lasting satisfaction . . . for lower plumbing upkeep in school, factory and public building washrooms.

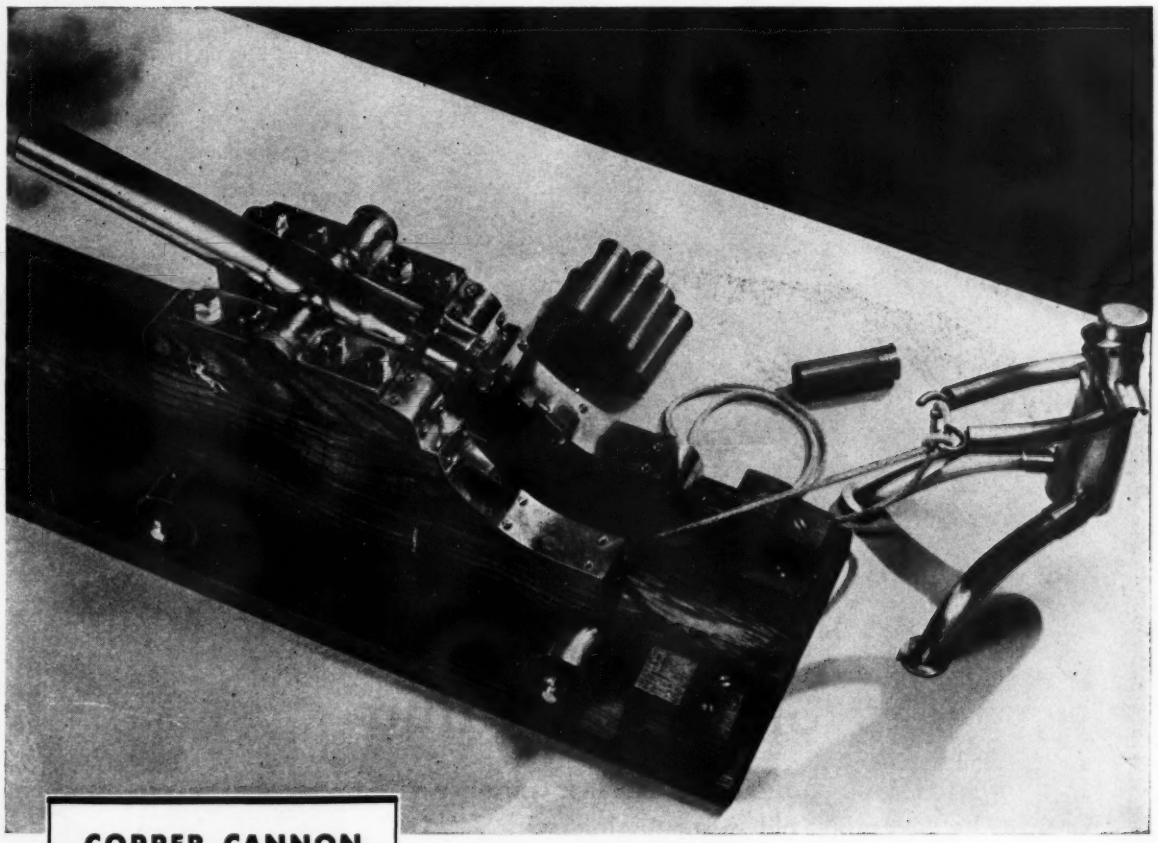
# CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO, ILL.
NEW YORK: 23 WEST 44TH ST.
*Branches and Sales Offices in One Hundred and Sixty Cities*

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

*Your visit to A Century of Progress Exposition should include a trip through the new Crane building.*

# SHOTGUN BLAST FAILS TO SPLIT CHASE RIGID COPPER TUBING



**COPPER CANNON**

The barrel of this artillery-piece is a length of 1" Chase Copper Water Tube. Breech is reinforced with 2¼ inches of 1⅛" tube. The explosion of a regular 12-gauge shotgun shell (about ¾" diameter, which fitted loosely in the bore) failed to split the tubing or loosen any of the sweated joints that hold the breech in place. The load used contained 3 drams of smokeless powder and 1⅛ ounces of shot.

FRANKLY, we didn't know ourselves what was going to happen when we fired a 12-gauge shell inside a piece of one-inch tubing. We knew Chase Rigid Copper Tube was mighty strong . . . but shotgun shells are shotgun shells. So we tied a long, long string on that trigger. But when the smoke cleared away, there was the tubing, hot and powder-blackened, but still sound.

This test *proves* the strength of Chase Copper Water Tube and Sweat Fittings. If you ever have a customer feel that because these *rustless* tubes and fittings aren't heavy and clumsy, they aren't strong enough — tell him about the shotgun test.*

**But don't try it unless you're an artillery expert—gunpowder is bad medicine for most people.*

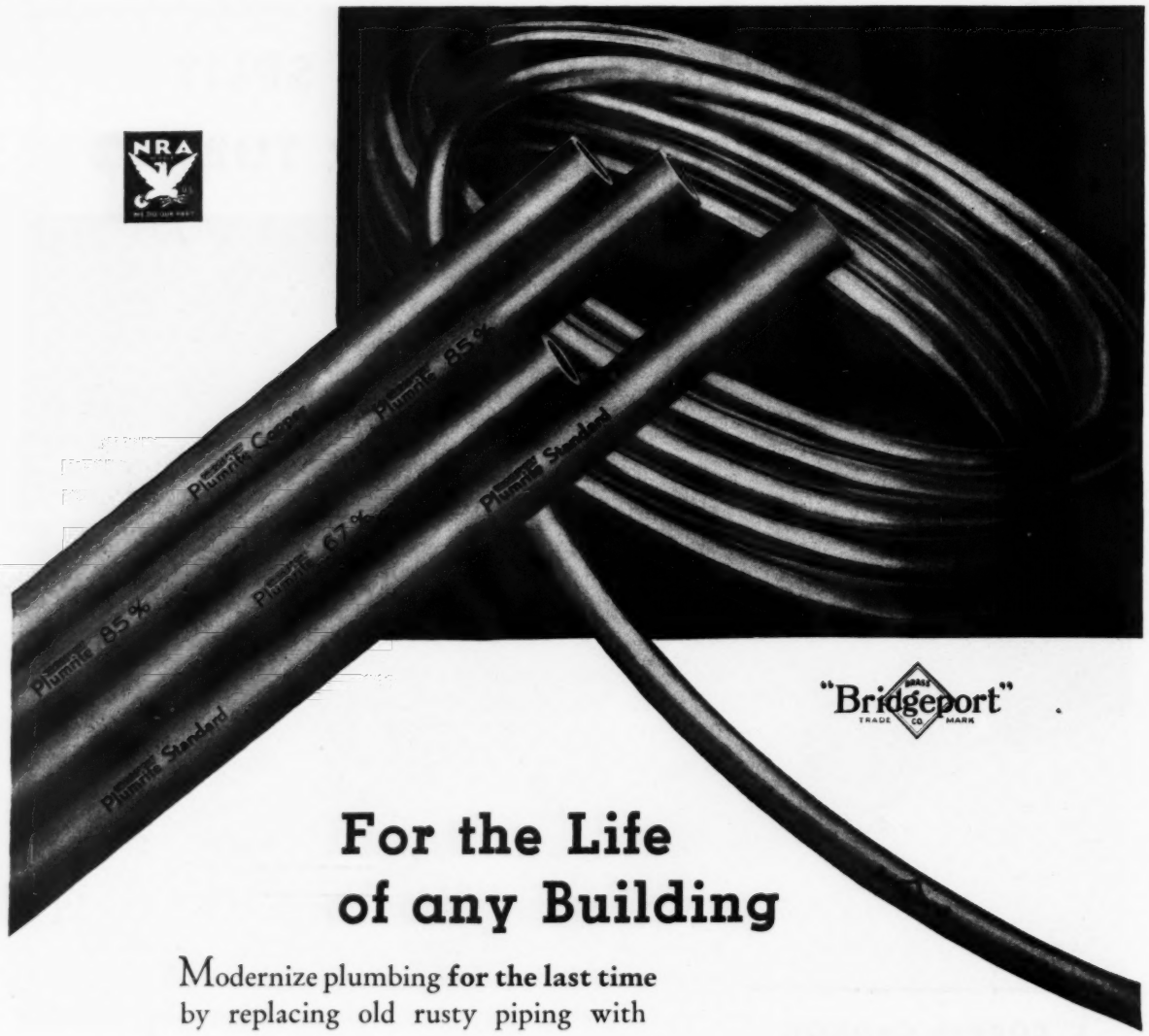
CHASE BRASS & COPPER CO.—Incorporated
Waterbury, Conn.

CHASE

*This seal on copper or brass is a proofmark of quality.*

## CHASE COPPER WATER TUBE AND SWEAT FITTINGS

NRA WE DO OUR PART




"Bridgeport" BRASS CO. TRADE MARK

# For the Life of any Building

Modernize plumbing **for the last time** by replacing old rusty piping with

## PLUMRITE BRASS PIPE and BRIDGEPORT COPPER WATER TUBE

and assure a clean, full-flowing water supply as long as the building may stand.

**We carry the complete line of Arco fittings for use with Bridgeport Copper Water Tube.**

●

**Send for a booklet of practical information on Bridgeport Copper Water Tube.**

● **Plumrite Brass Pipe** and **Bridgeport Copper Water Tube** cut dollars off the expected installation costs because they are easy to work . . . easy to install.

● **Fifty years of pipe and tube making experience** are behind Bridgeport Plumrite Brass and Copper Pipe, and Bridgeport Copper Water Tube. Bridgeport installations are found in some of the finest buildings in the country.

**BRIDGEPORT BRASS COMPANY**
BRIDGEPORT, CONNECTICUT

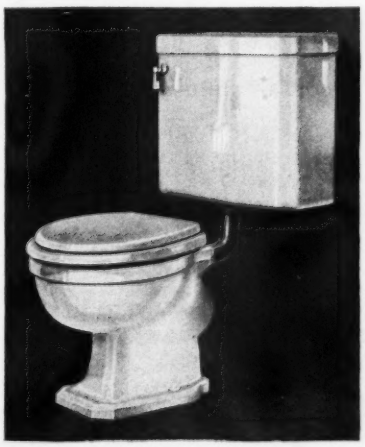
**NEW YORK • BOSTON • PHILADELPHIA • CLEVELAND • DETROIT • CHICAGO NEWARK • PROVIDENCE • CINCINNATI • ST. LOUIS • HOUSTON • DAYTON • AKRON • LOS ANGELES • SAN FRANCISCO •**

# SELECT FROM THE "TIME-TRIED 8"

## ...In the Spotlight for 1934 Sales

The CLIMAX—No. 5022

The CRAWFORD—No. 3294



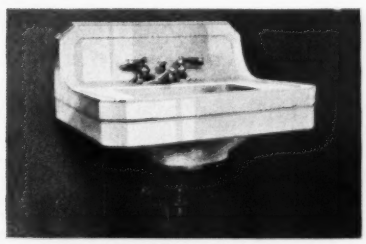
The CLINTON—No. 2472

OUT of the broad line of Universal-Colonial vitreous china fixtures—eight popular steady sellers are here presented for your review.

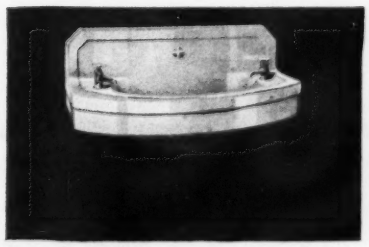
In this group you will find variety in style and range in price to meet both the new and replacement markets that await your calls.

Radically styled and unproved items may continue to "flash" the market, but the steady sales, certain turnover and fair profit to which you are entitled can come only from an enduring style appeal and high utility such as the Universal line affords.

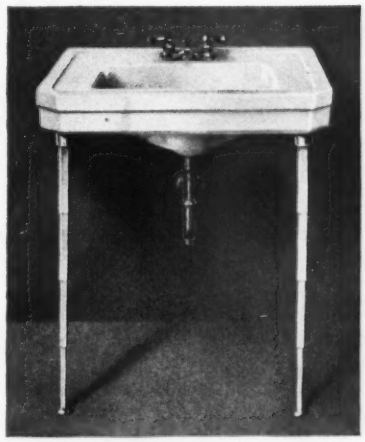
If you are in the drive for long time profit, don't overlook the sales advantages of the Universal staple line. Select now from the "time-tried 8." If you would like a handy little vitreous ash tray, just say so on your letterhead—no obligation.



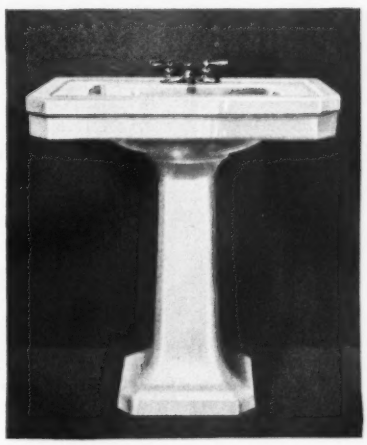
The CALDWELL—No. 8116



The CONSERVATOR—No. 8211H



The CHELTON—No. 8056



The CARLTON—No. 8046

The CAMBRIA—No. 8136

**UNIVERSAL SANITARY MANUFACTURING CO.**

**NEW CASTLE, PENNSYLVANIA**

# "Here's one Roof Flange that's got . . . EVERYTHING!"

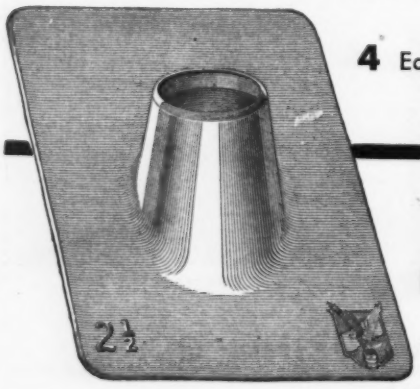
THE
EAGLE-PICHER
LEAD
COMPANY
CHICAGO • JOPLIN • CINCINNATI

1 It is all lead—one piece—strongest construction—built heavy to stand abuse and stretching.

2 No blowholes or laminations—made under 100-lb. pressure.

3 Easy to adjust—pliable and ductile—feather edge on boot.

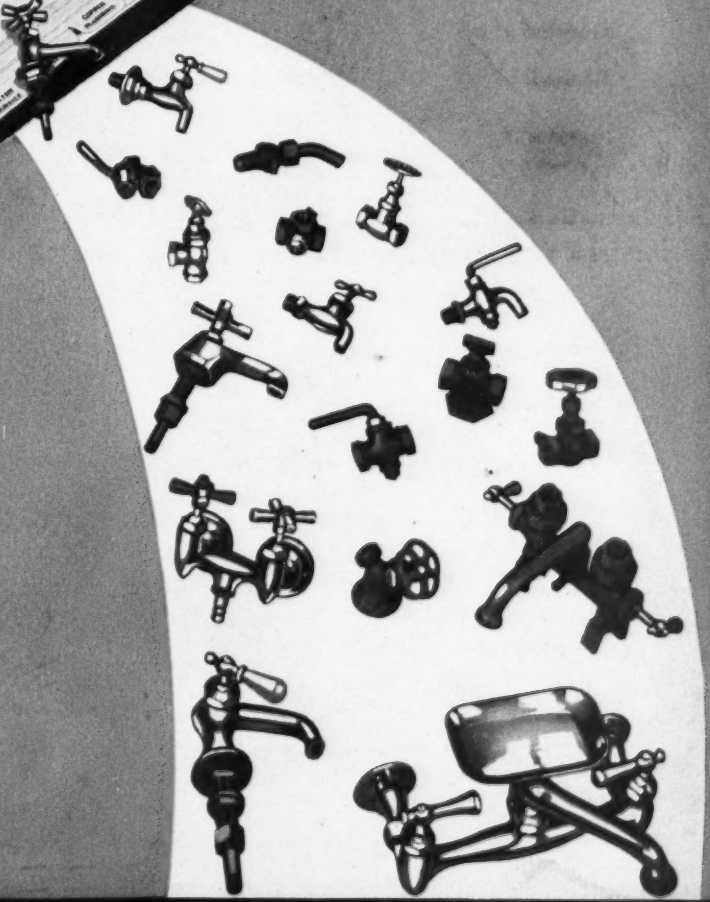
4 Easy to handle—rounded corners.




use EAGLE
super FLANGE

# Dependable Brass by Hays

Use
the HAYS Copper
Plumbing Method
to join Hays Quality Brass from Street to Bath. Write for the New 24-page Catalog on Hays Copper Plumbing



## from Street to Bath by Hays

C. W. A. examined 3,000,000 plumbing fixtures in 395,917 buildings in Chicago and found 800,000 leaking. This condition is typical of what NEGLECT has done in 5 years in all parts of the country. Now it will take experienced hands to repair the damage.

Hays Brass is moving fast and the real possibilities for you, Master Plumber, are becoming more evident every day. 5 years Neglect is building a huge replacement market for both of us because good workmanship and good material go together.

It's a simple matter to have this complete dependable Hays Brass Line at your finger tips - - Clip the handy coupon and mail it today.

HAYS MFG. CO. 1227 LIBERTY STREET
ERIE PA.

# HAYS Since 1869 Quality BRASS

COPPER PLUMBING - - - BATH FIXTURES

PLUMBING BRASS GOODS *from Street to Bath*

CLIP THE COUPON TODAY

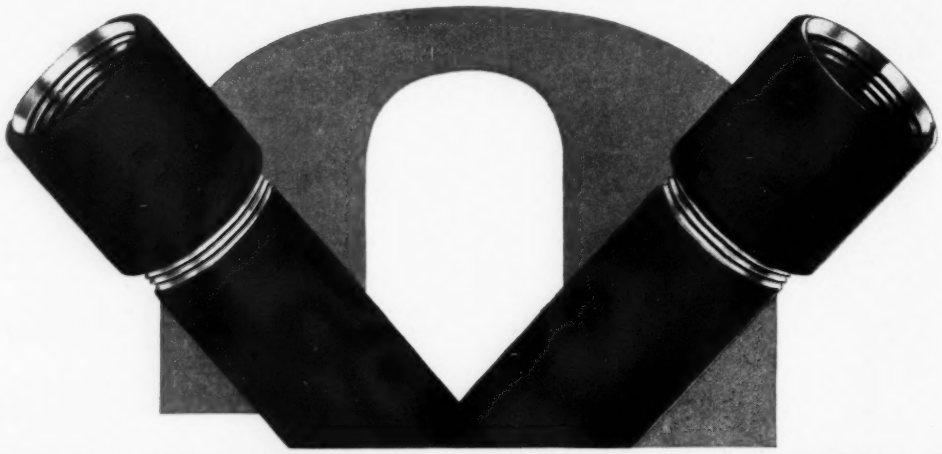
HAYS MFG. CO., 1227 Liberty St., Erie, Pa.
Gentlemen: Please send me catalog checked:
☐ New 24-page Catalog on Copper Plumbing.
☐ Catalog on Hays Quality Brass Goods.

Name .....

Address .....

City ..... State .....

NRA MEMBER U.S.



# THERE CAN BE NO QUESTION

## TONCAN IRON PIPE DOES LAST LONGER

Records of the service given by Toncan Iron Pipe in every type of installation prove conclusively that this modern alloy pipe does last longer. This statement holds true whether it is used in a plumbing or heating system in a building, in process lines in industrial plants, for supply and drainage lines on board ship, or carrying acid mine water far underground.

In the latest edition of "Pipe for Permanence" you will find the records of many comparative tests. And you will also find the technical information that explains why Toncan Iron Pipe consistently renders better service than other ferrous pipe slightly lower in cost.

Toncan Iron Pipe is the only pipe obtainable today that takes advantage of the properties of refined iron, copper and molybdenum to form an alloy that is rust-resisting to a higher degree than any other ferrous material, except the stainless alloys. It is the only pipe that combines with this rust-resisting feature the many advantages that Republic's Electric Weld Process alone can claim—100% perfect weld, straightness, roundness, uniform wall thickness, freedom from inside defects and absence of scale inside and out.

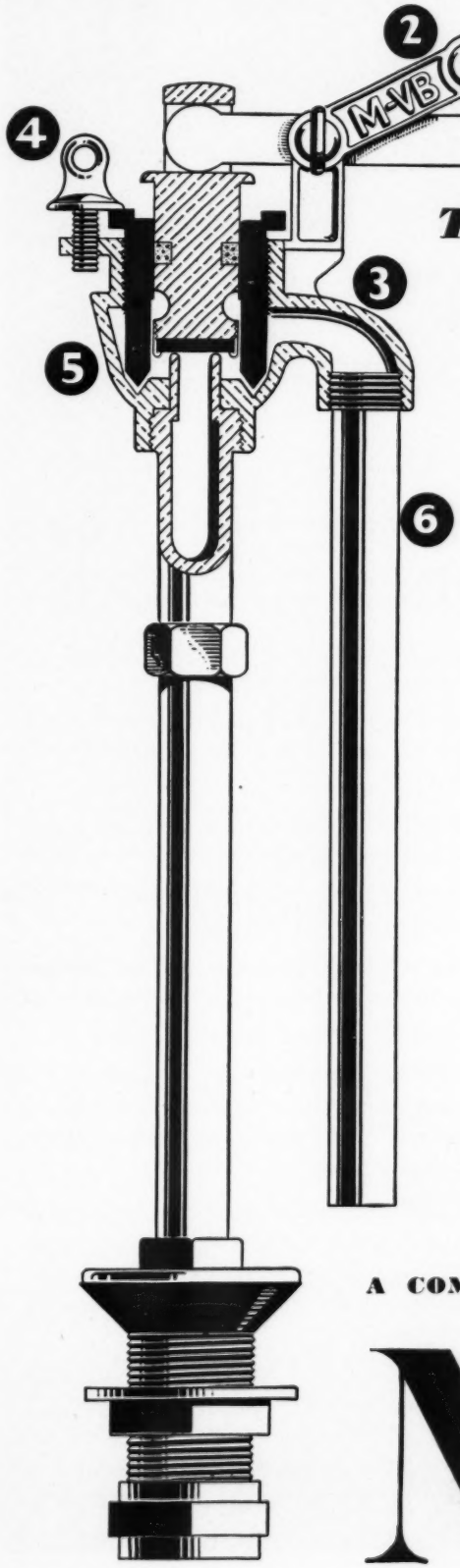
Every pipe buyer should know the facts. A copy of "Pipe for Permanence" will be sent on request.

REG U.S. PAT. OFF.
TONCAN
COPPER
MO-LYB-DEN-UM
IRON PIPE

**REPUBLIC STEEL CORPORATION**

GENERAL OFFICES YOUNGSTOWN, OHIO

# Six Reasons why you should know




# No. 18

## *The new* M-VB No. 18 *Ballcock*

**1** Even at the highest pressures, it uses a standard 4″ x 5″ float.

**2** A powerful new-type leverage makes it easy to install in close tanks, easy to get at the regulator.

**3** The regulator is hard rubber, to cut down corrosion, to prevent freezing into the body. Plunger has a full bearing in rubber for its entire length.

**4** Thumbscrews are cast bronze, a mark of quality.

**5** It's quiet as you want it, adjustable to absolute silence at any pressure from 5 to 200 pounds.

**6** Even at a pressure as low as 5 pounds, it can be adjusted to fill the tank in 100 seconds.

We're proud of this No. 18 Ballcock. And you'll be proud to install it. Quiet, fast, efficient, trouble-free, it's made to stay on the job without attention. There are no weak parts — it is M-VB quality construction throughout. Yet it costs no more than the ordinary type!

Look at the sturdy, simple construction. Note the 6 points of superiority. The M-VB No. 18 is the kind of fitting that satisfies customers and gives you a first-class reputation.

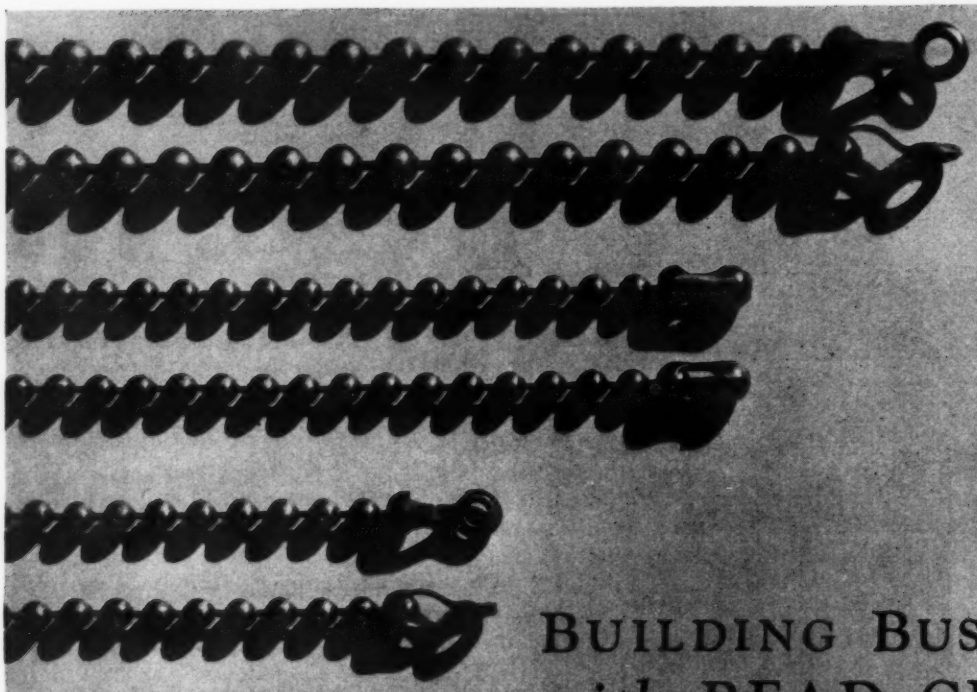
Ask your jobber for prices on the new M-VB No. 18. Write to us for the M-VB catalog.

**MORENCY-VAN BUREN DIVISION**
**Scovill Manufacturing Company**
**STURGIS MICHIGAN**

**A COMPLETE LINE OF CLOSET TANK FITTINGS**

# M-VB

SCOVILL



# BUILDING BUSINESS *with* BEAD CHAIN

Bead Chain is so generally used for chain and stopper assemblies and shower curtain hold-backs that it pays every master plumber to carry it regularly in stock, both in assemblies and on reels, in the standard plumbing sizes.

In these sizes Bead Chain is suitable for many needs, and gives good profit to the plumber. Watch for chain and stopper replacements, for shower curtain hold-backs, and on furnace and heating system controls.

In new construction it is being specified for skylight and ventilator chain. In older buildings there is an opportunity for this use, too, if you suggest it.

Couplings for Bead Chain are easily attached. The series of perfect swivels make Bead Chain non-kinkable for any use, and the bright metal beads are an attractive feature with any job.

You can build and develop business with Bead Chain in assemblies, cut lengths and bulk. Carry it in stock. Assorted sizes are available through your regular distributor for use in plumbing, ventilating and heating.

USE
BEAD CHAIN
FOR PLUMBING

Trade Mark Reg. U. S. Pat. Off.

THE BEAD CHAIN MANUFACTURING CO.
BRIDGEPORT — CONNECTICUT

# NOW'S THE TIME *to install* MONEY-SAVING PIPE

*Plumbing and Heating contractors can profit by economy in installation—the owner profits by long trouble-free service.*

The contractor will save time and money for himself by working with NATIONAL Pipe. Threading, cutting, installing, tightening up, and final inspection are so quickly accomplished with this exceptionally well made, smoothly finished pipe that the immediate gain is very clear.

The property owner's interest will be served because of the extra tight, extra secure, extra durable job that results when NATIONAL Pipe is installed.

Reputation, good will, and a profitable business may be expected to grow up where such materials are combined with sound workmanship. Make NATIONAL Pipe your standby. Produced with unrivaled facilities by the largest manufacturer of wrought pipe in the world. Meets all standard specifications. Recognized everywhere as—

***America's Standard Wrought Pipe***
***For Plumbing and Heating Purposes***

NATIONAL TUBE COMPANY · PITTSBURGH, PA.
Subsidiary of United States Steel Corporation

Check these 10 outstanding advantages of NATIONAL PIPE

1. *Completely uniform.*
2. *Strong and ductile.*
3. *Threads easily.*
4. *Flanges readily.*
5. *Coils and bends well.*
6. *Sound joints.*
7. *Available in copper-steel.*
8. *Scale-free.*
9. *Spellerized.*
10. *Rigidly tested and inspected.*

# NATIONAL PIPE

# You Want this Book

## Get Your FREE Copy

## CONTENTS

**General Considerations—Cold Water Pipes — Corrosion — Strength — Effect of Heat — Expansion — Lime Deposits —Lag in Heating Systems— Heat Loss—Waste and Vent Systems—Greases and Fats —Diameters—Fittings—Temperature Limits**

**and, in addition, cross-section illustrations and a comprehensive table of comparative data.**

Technical facts of surprising importance, written in plain, every-day language, are contained in this book. It is a straightforward comparison of copper with piping systems of other materials. Rates of water flow and the various effects and results of heat are given in detail.

This is a thorough-going study of the question. Whether or not you have ever installed a job in copper you will find this book very interesting and highly profitable. The book contains 34 pages and cover. Because of the expense of production, we must limit free distribution to one copy for each master plumber. Send for your free copy today.

NIBCO, Elkhart, Ind.
Please send my FREE copy of "The WHY of Copper Plumbing." I have ☐ have not ☐ installed one or more copper plumbing jobs.
My Wholesaler is_____
City _____
Signed _____
St. & No._____
City _____
State_____

## Northern Indiana Brass Co.
### ELKHART, INDIANA

# AUTOMATIC FIRING *Saves* USERS 42.9%

**LAMBERT BUILDING**

"We purchased three Peabody Coal Burners for our St. Louis Plant. The service from them would justify our placing additional orders if we were in the market for more stokers. Our total coal bill is 45 per cent less than it was."

LAMBERT PHARMACAL COMPANY
J. Y. Lund, *Vice-President*

Exclusive methods of applying the principles of under-feed firing and new, original Peabody Stoker features are saving thousands of heating and power plants an average of 42.9 per cent in fuel cost.

The Peabody Stoker, newly improved, makes these savings possible by building and maintaining *a fuel bed that extracts every possible heat unit from the coal.*

Before you equip your plant, learn about these improvements . . . the Feedometer that makes the Peabody fuel bed *automatically subject to the finest degrees of balanced fuel and air control* . . . the tapered feed screw that extends the full length of the retort and *makes the fuel bed even, mound shaped and porous* throughout . . . the vertical sided retort that *insures a clean fire* . . . the rugged Peabody construction that means years of efficient service.

**WE ARE INTERESTED IN RELIABLE DEALERS**

There are excellent business opportunities handling Peabody Stokers, on distributor or dealer basis, in localities where there are modern industrial or commercial enterprises. Reliable firms or individuals having sound financial backgrounds are invited to investigate our up-to-date merchandising plan.

These superiorities and their advantages to you are covered in our new catalogue, "Peabody Stoker for Low Cost Power and Heat." The coupon will bring you a copy. And if you would like a definite estimate of the specific savings Peabody Stoker will bring to your plant, our representative will call for that purpose. The request places you under no obligation whatever.

• • •

Complete line of stokers; residence sizes and up to 250 hp.

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**THE MODERN COAL BURNER**

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"We tried several sources of information and DOMESTIC ENGINEERING was the only one that gave us results."
E. R. H.,
New York

# BETWEEN OURSELVES

## By Wire

IN order that readers might have a complete report of the highly important 52nd Annual Convention of the N.A.M.P., the story was sent by telegraph and was handled much as a daily newspaper handles important events. And there cannot have been many conventions, since the first, as highly important as this one. Almost with the speed of a daily paper the complete report of the convention gets to our readers.

## The Plumbing Code

BECAUSE it charts the course which the plumbing industry will follow from now on, the Code is given completely in this issue together with a number of comments which will enable readers to interpret its measures. The greatest satisfaction was expressed at the Washington Convention over the handling of Code matters by the Administration which now retires to give over the actual working of the Code to a new group headed by John J. Calnan. A copy of the Code and the comments should be kept for future reference.

## Plumbing and Health

IT is unfortunate no doubt that human nature is so constituted that fundamental truths are frequently disregarded until tragic circumstances bring them sharply to our attention. While the N.A.M.P. has always officially fostered the viewpoint that plumbing and health stand in a vital relationship, the last year has taught the public at large the truth of this contention. The discussion of this relationship between plumbing and health had a permanent place in the convention program as will be seen from the report.

## Business in Sight

RECENTLY an acquaintance expressed some surprise over the fact that three train loads of people traveled from Pittsburgh to Chicago to witness a national league ball game. The moral is plain when coupled with the results of the CWA survey of building needs, which is reported in the early pages of this issue. The survey indicates the need for modernization. The spending for luxuries and entertainment which has continued right through the depression indicates that enough people have money if the proper kind of sales effort is put forth. Sooner or later, of itself this tremendous dammed up demand will break loose. But smart merchandisers are working now on prospects who can afford to modernize and they will not only get some business now, but will be in the "big money" when the full impact of the demand for needs which people have been denying themselves is felt.

## State Convention

POLITICALLY wise men have for many years watched elections in certain states and have, with reference to one of our states, coined the phrase that as that state goes "so goes the nation." Something of this same truth gives importance to the 16 reports of state conventions of Master Plumbers, because from these state conventions arise many of the movements which later are adopted by the national body.

## The Public on Wheels

IN the last century, young gentlemen of good family in Europe were sent on what was known as the "Grand Tour." But the traveling which these young gentlemen did if, in favorite statistical fashion were laid end to end, it would hardly equal the mileage of a handful of American families who take their vacation on wheels. This motor touring has created a market for tourist accommodations and the sanitary standards for these tourist camps has steadily been forced upward by local health authorities. A million miles of roads mean millions of dollars spent.

## Planning for Business

ALL these sales opportunities will mean most to those who plan best. The number of articles in this issue on sales quotas and planned programs is of interest to all three branches of the industry because it outlines two methods which hold promise of outstanding success.

## "Back Up Sherman"

PERHAPS it is not the best of good manners to quote ourselves, but the editorial which leads off the Automatic Heat and Air Conditioning section in this book, and the article concerning the efforts of R. M. Sherman, President of the American Oil Burner Association, to bring about better relations with utility competition, will bear close reading and active support.

*Your Editor*

# 3 leaders
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A heavy duty wrench.
The strongest pipe wrench made.
Housing forged as part of handle.
All forged steel . . . Only 4 parts. No pins or rivets.
All parts heat treated.

**THE WALWORTH PARMELEE**

For brass and plated pipe.
Ideal for use on coils and other close quarter work.
No teeth—grips like the human hand.
Breaks the tightest joint without biting.
Perfect ratchet action.

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The standard for 64 years.
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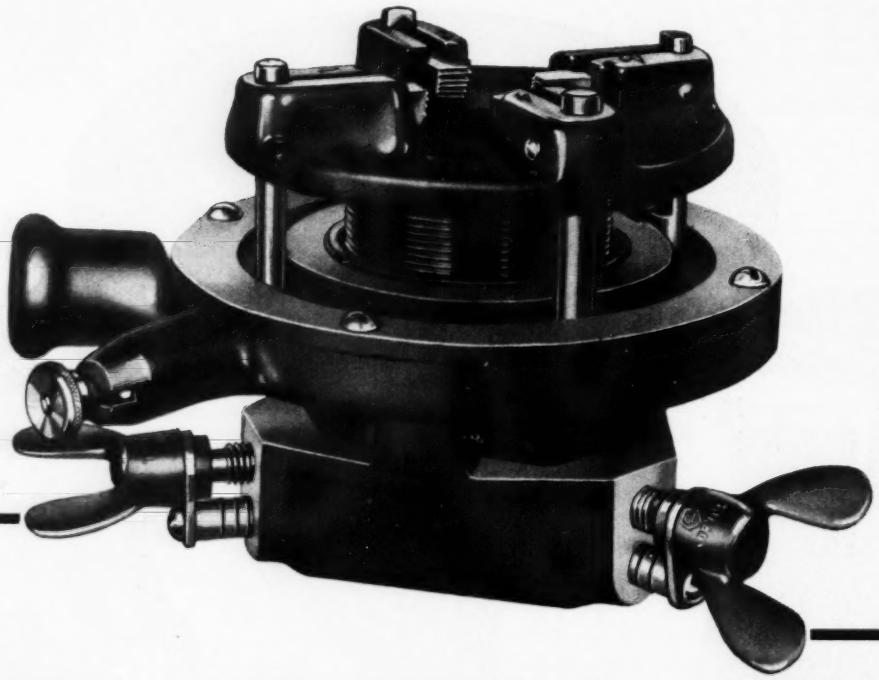

# Why a "Toledo" No. 1BR?

## 1″ to 2″ Ratchet Threading Tool

**1. BETTER WORK HOLDER**

Three chuck jaws 1¾-inch wide clamp tool rigidly, accurately to the pipe even though the pipe is cut off crooked. Three large wing head thumb screws assure stronger, more positive grip. Indexed guide posts permit easier centering. Jaws will not mar brass pipe, and will take a 2-inch coupling for the cutting of close nipples.

**2. STURDIER CONSTRUCTION**

Stronger work holder. Hardened steel taper pins. No soft metal parts to wear. Longer taper pin bearings—no danger of working loose or stretching. No skimping in weight to weaken tool and shorten its length of service.

**3. BETTER BALANCE**

Ratchet handle near center of tool, making a properly balanced tool as it is put on the pipe. Easier handling.

**4. EASIER OPERATION**

All moving parts accurately machined, perfectly fitted. Dies hobbed with correct clearance for each size pipe, and ground with proper lip angle, assure easy cutting. "TOLEDO'S" are the only tools using 2-inch high speed steel dies which prevents burning cutting edges on account of the higher peripheral speed when threading 2-inch pipe.

**5. SIMPLE TIME-PROVEN CONSTRUCTION**

The original "TOLEDO" design of the taper pin and receding die principle has never been improved upon or equalled. "TOLEDO," the pioneer of all easy cutting pipe tools, bases its design and manufacture upon the result of over 30 years experience. No yearly models to become obsolete, but constant improvement as "TOLEDO'S" experience dictates.

**6. "TOLEDO" DIES ONLY FOR "TOLEDO" TOOLS**

Genuine "TOLEDO" dies should be used only in genuine "TOLEDO" tools. Only "TOLEDO" experience can create and produce the superior quality built into each set of genuine "TOLEDO" trademarked dies, which assures the purchaser the service and satisfaction to which he is entitled when buying extra dies for his "TOLEDO" tools. Look for the trademark and insist upon it.

**SPECIFY A "TOLEDO" No. 1BR FOR YOUR NEXT THREADING TOOL. YOU WILL FIND IT THE BEST PIPE THREADER YOU HAVE EVER USED.**

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"TOLEDO"

*WHEN BETTER TOOLS ARE BUILT "TOLEDO" WILL BUILD THEM.*

# OUR INDUSTRY

*June, 1934*

# Best of Success, John Calnan

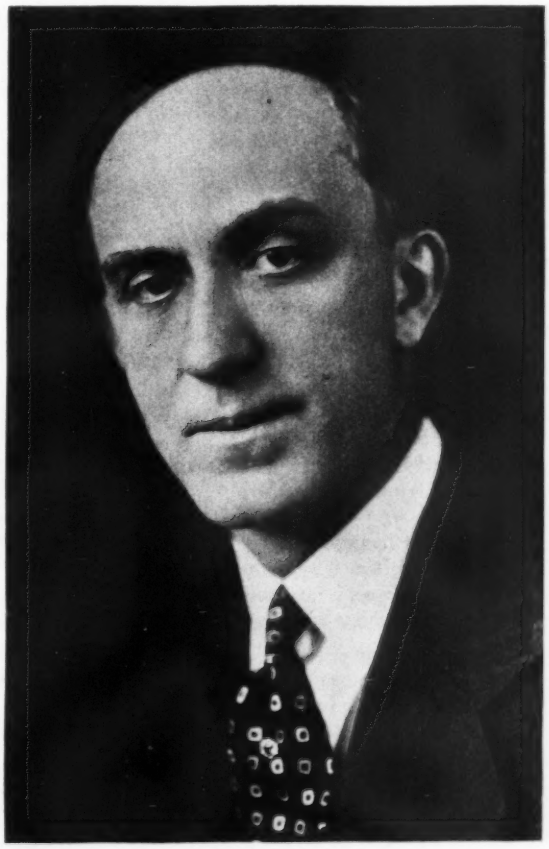
Washington, D. C., May 31.—(By Wire)—John J. Calnan, of Chicago, late today was elected president of the National Association of Master Plumbers taking office July 1. His unanimous election by delegates from 46 of the 48 states and the District of Columbia recognizes the work which he has done as local, state and national officer.

He comes to the chief executive position of the growing plumbers' association at a critical time. The task of securing a code under the National Industrial Recovery Act has just been finished after a year of strenuous effort by President Barrett.

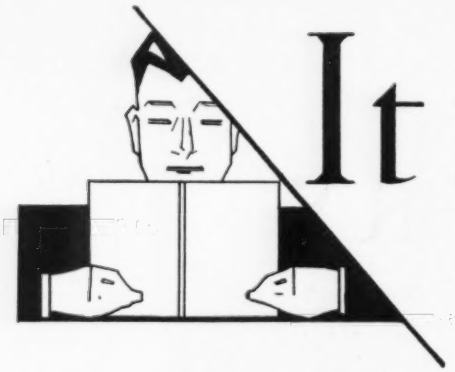
The code becomes effective Monday, June 4. The equally great task of bringing to the members of the national association and to members of the entire plumbing industry the benefits which the code program promises, now devolves on Calnan.

The responsibilities of the president have taken on greater weight as the activities of the national association have multiplied. Last year, those responsibilities multiplied under the code program with its complex interrelation with other branches, with other industries and with the government. Now Calnan takes leadership under new but equally untried conditions. The code is no longer an affair of the national association alone. It is a government affair. It offers a promising prospect to the whole industry. He has the job of trying to realize that promise for his members, while directing at the same time the customary duties of his office.

He brings to that task a record of success from all earlier posts. He was unanimously chosen. His friends are confident of his success.



**John J. Calnan, of Chicago, elected president of National Association of Master Plumbers at Washington, D. C.**



# It happened

## *Annual N. A. M. P. Convention is held in Washington, D. C.*

### *Calnan Elected New President—Total Attendance Near 2,000—Chicago Has Next Meeting*

Washington, D. C., May 31.—(By wire.)—Plumbing Contractors and dealers, delegated by members of 46 of the 48 states and the District of Columbia, met here this week and studied the NRA code program. They unanimously approved the work of those who secured the code and then placed in the trained hands of John J. Calnan of Chicago the task of translating the new code into an effective instrument. They chose George W. Frank of Buffalo as vice president, Charles Gawne of Chicago as secretary and re-elected H. O. Green, treasurer. The new officers will take up their respective tasks on July 1.

The number of delegates was 367. Other members and visitors brought the total attendance close to 2,000.

While the code program dominated the sessions, discussions covering other problems relating to the industry, especially those emphasizing the now recognized relationship between plumbing and public health, repaid the attendance.

During the convention it was shown that President Barrett had won the admiration of the entire membership by the arduous work which he had carried on for them during the past year when he gave them his complete time and ability. The delegates recognized the intricate problems he had been called upon to reconcile with other industries in representing them, and with NRA experimenting its newly assumed task. Few presidents received the sincere and affectionate ovation with which the large crowd attempted to repay President Barrett for this work.

During the convention Chicago was chosen as the city for the next annual meeting.

Memorial services were held in honor of deceased members, with special services for John S. Cassedy and J. J. Vogelpohl, two past presidents, and George F. Uber, of Philadelphia.

## Amebic Epidemic Major Topic of Discussion

One of the outstandjng subjects discussed at the Washington convention of the N. A. M. P. was that of the relation of the plumber to public health, and, more recently the outbreak of amebic dysentery and the recognition by the medical profession of the part which defective plumbing played in this outbreak.

Joel I. Connelley of Chicago read an address by Dr. Herman N. Bundeson, head of the board of health at Chicago, discussing fully the importance of plumbing in its relationship to health, tracing the history of the amebic dysentery outbreak in Chicago, which medical authorities admit resulted from faulty plumbing, and urging health authorities to recognize the part played by plumbing in providing healthful conditions. This address, by vote of the convention, is to be made available to local health and public officials throughout the country. It covers much of the ground reported in earlier issues of DOMESTIC ENGINEERING.

Frank J. Fee of New York moved that the Bundesen report be put before health and public officials. Jere L. Murphy, New York, told of the part plumbers have played in uncovering and correcting cross connections. He said every master plumber is a health officer, as he has taken an examination and is licensed by the authorities to show his qualifications in providing more healthful conditions. Vice President Calnan spoke in appreciation of Dr. Bundesen's work. Cross connections, he stated, are an old issue but Dr. Bundesen has made it a live one. John Shanahan of Norfolk, Va., urged that N. A. M. P. representatives be present at the various coming medical and engineering meetings where this subject is planned for discussion. This motion was adopted. H. O. Green, Tulsa, Okla., recalled that this must be made an individual issue, not just left to the association.

## Information Given for Promoting of Home Repairs

Folders are being distributed by the district offices of the Home Owners Loan Corporation, to eligible applicants for refinancing loans under the Home Owners' Loan Act of 1933, as amended, which permits the disbursement of up to $200,000,000 for repairs, and rehabilitation solely of homes refinanced by the corporation.

Included are information as to the law and explanation of the principles of sound reconditioning and a check list of the items.

# this month!

## Heating Association Registers Heating Contractors

The Construction Code Authority has designated the Heating, Piping and Air Conditioning Contractors' National Association as the agency for the registration of contractors in its division for the purpose of providing those contractors with official copies of the labor provisions of the Code of Fair Competition for the construction industry.

The Heating, Piping and Air Conditioning Contractors National Association has mailed application forms with complete instructions as furnished by the National Recovery Administration to the last known address of all heating, piping and air conditioning contractors. Any heating, piping and air conditioning contractor who for any reason has not received copy of the application form should communicate promptly with the Heating, Piping and Air Conditioning Contractors National Association, 1250 Sixth Avenue, New York, N. Y.

## *Prompt Action Taken to Organize Code Authority*

The National association is acting promptly in establishing the organization for code work. The code of fair competition for the plumbing contracting industry, which was approved on May 15, 1934, by President Roosevelt, becomes effective on June 4.

The code authority named is comprised of Robert J. Barrett, Washington, D. C., chairman, John J. Calnan, Chicago, Ill., George H. Drake, Buffalo, N. Y., P. W. Donoghue, Boston, Mass., Charles M. Swinnerton, Los Angeles, Calif., Jere Sheehan, Jr., St. Louis, Mo., and Edward B Kleine, Cincinnati, O. These seven men represent the national association, while John Coefield, Thomas E. Burke and Michael F. Garrett, president, general secretary and organizer, respectively, represent the journeymen's association. Alex Rotker of Brooklyn, N. Y., Louis B. Tuchmann of Norfolk, Va., and J. E. Boyland of Washington, D. C., represent the non-members.

Subject to NRA supervision, this code authority is expected promptly to provide rulings under which the various state and local groups can function to make the code quickly operative.

Code developments were outlined by deputy administrator Dusenberry, Stephen F. Voorhees, boiler construction industry, Walter J. Kohler for manufacturers, William J. Spillane for wholesalers and George H. Drake for the plumbers. John H. Zink, the new vice president of the Heating, Piping and Air Conditioning Contractors National Association talked briefly on their code, which is not yet approved.

From these discussions there developed a picture of opportunity to correct many evils in business, depending upon the patience of those in the industry in waiting for the perfecting of the organization and in showing their loyalty and cooperation.

The code job ahead is to organize to put into effect the new code. (It takes effect June 4) and provides state, zone and local directing groups, also to go ahead trying to secure plumbing retail code to cope with problems forced out of code just approved.

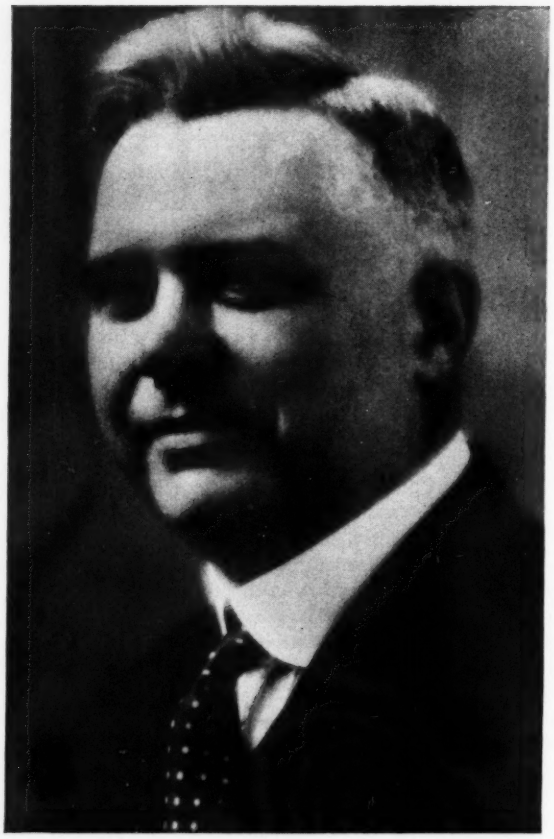
## Construction Rated Outstanding Part of Industry

Frank C. Walker, executive director of the National Emergency Council, just recently made public information with regard to the problem that is dealt with in the housing program which the council has recommended to President Roosevelt and on which the President has asked Congress for legislation. He points out that from any one of several points of view an attack on the housing problem can at the present time be made a major factor in economic readjustment.

He further states that "in the first place, the construction industry as a whole is outstanding among the large industries of the United States. Furthermore, it has been the most severely depressed of our large industries, and the one that has shown the least response during the past year to the general economic recovery. The decline of residential construction to but one-tenth its former total has been even more severe than the decline of construction generally. The extent of the decline in the construction industry is shown by the following brief comparisons: Former annual aggregate of construction, $11,000,000,000; present annual aggregate, $3,000,000,000; former annual residential construction, $3,000,000,000; present annual residential construction, $300,000,000.

"From the point of view of unemployment, this enormous decline in the volume of construction is accountable for our largest single emergency-relief problem. The great bulk of the persons ordinarily engaged in the construction industry and related activities are still unemployed. These workers and their families constitute the largest group still dependent on public and private relief."

# What the Code Means to the Plumbing Industry



**Robert J. Barrett, president of The National Association of Master Plumbers, who received recognition for the outstanding work he accomplished in the development and passage of the Code**

DURING the Convention just held in Washington, an outstanding ovation was extended to Robert J. Barrett, who is president of the National Association of Master Plumbers, for the great work which he has done. The admiration of the entire membership was won by him through his arduous work during the past year when he gave his complete time and ability to working out the problems resulting from the development and passage of the Code of Fair Competition for the Plumbing Contracting Industry. This is what Mr. Barrett says in regard to the Code: "A year has passed since we started to work on a Code of Fair Competition for our industry. In that year, the Code Committee has worked diligently and intelligently. Resistance has been met from many quarters and battles have been fought.

"We have gone through the experience of fifty-two years and have sought to perpetuate the good we found there, and to eliminate the bad. We have written a law for our industry.

"Whether or not the law will be dead on the statute books or whether it will be the active, guiding principle of our industry, remains to be seen.

"The time has come to turn the N. R. A. to practical benefit to ourselves. For a year we have been standing on the side lines while the rest of the country has passed in parade to prosperity. We have our Rules. Now let's get after the business," is President Barrett's suggestion.

In discussing the subject of the Code at the Convention, Patrick J. Hurley, former Secretary of War and present legal adviser of the N. A. M. P. on the Code, states that:

"The National Association of Master Plumbers has within this month succeeded in getting adopted a code of fair competition for the plumbing contracting division of the construction industry, to become effective June 4, 1934. The code represents a high standard of business ethics, but it is not perfect. The plumbing industry has not been coordinated. It should be coordinated from the manufacturer down through all its stages to the sanitary installation by master plumbers. The code now in existence is but a step toward justice and perfection. It should be the purpose of the master plumbers to prevent all monopolies in the plumbing industry. The danger of monopolies becomes apparent when it is understood that there are many engaged in the different branches of the industry who up to the present time are not under any code. There are at present those engaged in branches of the plumbing industry who by reason of the NIRA consider themselves not subject to any anti-trust or anti-monopoly laws. On the proposition to bring all of these under a basis code of fair competition, the master plumbers have just begun the fight."

# Code of Fair Competition for the Plumbing Contracting Industry

**(Reproduced in Full)**

*The code for the construction industry, to which this code is a supplement, was published in full in September, 1933 issue*

(Supplement to Construction Code)
Approved May 15, 1934, Date effective June 4, 1934

## ARTICLE I. DEFINITIONS

SECTION 1. The term "Plumbing Contracting Division" or "Division" as used herein, includes selling to consumers and/or repairing or installing, for profit or hire, all types of plumbing equipment and fixtures, including water supply systems or parts thereof, drainage systems or parts thereof, plumbing connections to air conditioning systems, air and gas piping, gas and gasoline piping, vacuum cleaning systems or parts thereof, such other piping and equipment as is commonly handled by Master Plumbers, and all other articles pertaining to plumbing.

SECTION 2. The term "Plumbing Contractor" or "Master Plumber," as used herein, is defined as: Any individual who has passed a satisfactory examination, where required by law, covering his technical training and experience in the engineering and manual aspects of his Division, has a license where required, in conformity with the requirements of the area in which he operates or, in areas where no license is required, is capable of making a satisfactory installation under either the "United States Bureau of Standards' Recommended Minimum Requirements for Plumbing as revised to May, 1931," or the "Plumbing Code" approved by the National Association of Master Plumbers of the United States, Inc., in Convention June, 1933; or a firm, corporation or other entity organized for the purpose of selling and installing plumbing products, any member, officer, or regular employee of which is qualified as above provided. Copies of said "Recommended Minimum Requirements" and "Plumbing Code" shall be obtainable through the Code Authority.

SECTION 3. The term "Association," as used herein is defined as the National Association of Master Plumbers of the United States, Inc.

SECTION 4. The term "Member of the Division," as used herein, includes any individual, partnership, corporation, or other person engaged in the Division as an employer, either on his or its own behalf.

SECTION 5. The term "Employer," as used herein, means any employer engaged in the Division.

SECTION 6. The term "Employee," as used herein, includes any and all persons engaged in the Division, however compensated, except a member of the Division.

SECTION 7. The term "Laborer," as used herein, is one who is an ordinary skilled laborer capable of excavating, drilling, cleaning, moving, and other heavy manual work.

SECTION 8. The term "Apprentice," as used herein, is an employee whose age when starting his apprenticeship is over eighteen but not over twenty-one years. The term of apprenticeship shall not exceed a period of five years.

SECTION 9. The term "Consumer," as used herein, is defined as any purchaser of plumbing products who purchases for ultimate consumption and not for resale, excepting, only, persons subject to this Code.

## ARTICLE II. MAXIMUM HOURS AND CONDITIONS OF EMPLOYMENT.

SECTION 1.—*Regulations of Hours of Work.*

No employee shall be permitted to work in excess of eight (8) hours per day or forty (40) hours per week, provided that this limitation shall not apply to any employees engaged in managerial, supervisory, or executive capacity, receiving compensation in excess of Thirty-five (35.00) Dollars per week, or to watchmen. However, no employee engaged in a supervisory capacity who performs manual labor shall be included in this exception.

SECTION 2.—*Emergency.*

In cases of emergency, employees may be permitted to work not in excess of forty-eight (48) hours per week; provided, however, that the total working time in any four (4) consecutive weeks shall not exceed one hundred and sixty (160) hours. Emergency work shall be any work necessary for the protection or preservation of life or health, for the prevention of damage to property, or made necessary to avoid undue disruption of business. Not less than one and one-half (1½) times the regular rate shall be paid for work done in excess of the maximum regular hours of work prescribed in this article.

SECTION 3.—*Watchmen.*

No watchman shall be permitted to work more than fifty-six (56) hours in any one week or more than six (6) days in any seven (7) day period.

SECTION 4.—*Posting.*

All employers shall post, and keep posted, in conspicuous and easily accessible places in their offices and shops, all provisions of the Code affecting this Chapter as to hours of employment, rates of pay, and all other labor provisions.

SECTION 5.—*Standards for Safety and Health.*

Every employer shall make reasonable provisions for the safety and health of his employees at the place and during the hours of their employment. Standards for safety and health shall be submitted by the Divisional Code Authority to the Administrator within sixty (60) days after the approval of this Chapter.

SECTION 6. No member of the Division shall directly or indirectly, or by any subterfuge, sublet solely the labor services required by any contract secured by such Member.

SECTION 7. No member of the Division shall avoid or

evade the labor provisions of this Chapter by contracting his work to any person or persons subject to labor provisions less stringent than those provided in this Chapter.

## ARTICLE III. MINIMUM WAGE RATES

No employee shall be paid at less than the proper rate for such employee determined in accordance with the following schedule:

SECTION 1. (a) The United States shall be divided into three zones as follows:

**Southern Zone**

| | | |
|---|---|---|
| South Carolina | Alabama | Texas |
| Georgia | Mississippi | New Mexico |
| Florida | Louisiana | |
| Arkansas | Oklahoma | |

**Central Zone**

| | | |
|---|---|---|
| Delaware | Utah | Missouri |
| Maryland | California | Kansas |
| Virginia | North Carolina | Nevada |
| Tennessee | West Virginia | Dist. of Columbia |
| Colorado | Kentucky | |

**Northern Zone**

| | | |
|---|---|---|
| Maine | Wisconsin | Michigan |
| New Hampshire | Minnesota | Illinois |
| Vermont | Nebraska | Iowa |
| Massachusetts | Wyoming | North Dakota |
| Rhode Island | Oregon | Montana |
| Connecticut | South Dakota | Washington |
| New York | Idaho | |
| New Jersey | Pennsylvania | |
| Indiana | Ohio | |

*(b)* The hourly minimum wage rates to skilled mechanics and unskilled laborers shall be:

**Southern Zone**

Skilled Labor .....$1.00 Unskilled Labor .....$0.40

**Central Zone**

Skilled Labor .....$1.10 Unskilled Labor .....$0.45

**Northern Zone**

Skilled Labor .....$1.20 Unskilled Labor .....$0.50

The above shall not be construed to authorize reductions in existing rates of pay.

*(c)* Minimum wages for Apprentices shall be twelve dollars ($12.00) per week. No member of the Division shall have more than two (2) Apprentices in his employ at any one time, the names of such apprentices to be transmitted to the Divisional Code Authority.

SECTION 2. Nothing in this Article shall be considered to alter or amend Article III, Section 1 of Chapter I, where the wages so agreed upon exceed the minimum rates in this Chapter.

SECTION 3. No employer shall make payment of wages due, other than in lawful currency or by negotiable check therefor payable on demand at par. All wages shall be exempted from any payment for pension, insurance, or sick benefits other than those voluntarily paid by the employee or required by State law. No employee shall be paid at a greater interval than at the end of each month. No employer shall accept any rebate directly or indirectly, or give anything of value, or extend any favor to any person for the purpose of influencing rates of wages or the working conditions of his employees.

SECTION 4. No employer shall reclassify employees or duties of occupations performed, or engage in any other subterfuge so as to defeat the purposes or provisions of the Act or of this Code.

## ARTICLE IV. ADMINISTRATION

Further to effectuate the policies of the Act and to administer this Code, a Divisional Code Authority for the Plumbing Contracting Division is hereby established as provided hereinafter.

SECTION 1.—*Divisional Code Authority. Organization and Constitution.*

The Divisional Code Authority for the Plumbing Contracting Division hereinafter referred to as the "Divisional Code Authority" shall be composed of thirteen (13) Members, seven (7) of whom shall be elected within thirty (30) days following the effective date of this Code, and annually thereafter, from the Board of Directors of the Association by a majority vote of said Board of Directors, and each Member so selected shall serve until his reelection or his successor's election. Three (3) Members shall be appointed by the Board of Directors of the Association from Members of the Division who are not members of the Association, selected in any manner approved by the Administrator, to serve until the Members of the Division who are not members of the Association shall select their own representatives to serve in place of such three (3) appointed by the said Board of Directors. The three (3) remaining members of the Code Authority shall be appointed annually by the United Association of Journeymen Plumbers and Steamfitters of the United States and Canada, and each member so appointed shall serve until he is reappointed or his successor appointed. Each member of the Divisional Code Authority shall have one (1) vote. After said Divisional Code Authority has been duly established, the members thereof may, in manner and form required by law, incorporate in the State where the interests of said body are best served, provided, however, that said corporation is not organized for profit.

SECTION 2. To administer this Code within this Division during that period from the effective date of the Code to the date of election of the Divisional Code Authority, the Code Committee, which had been empowered to formulate and assent to a Code for this Division, shall be authorized to act in the capacity of a temporary Divisional Code Authority.

SECTION 3.—*Powers and Duties of the Divisional Code Authority.*

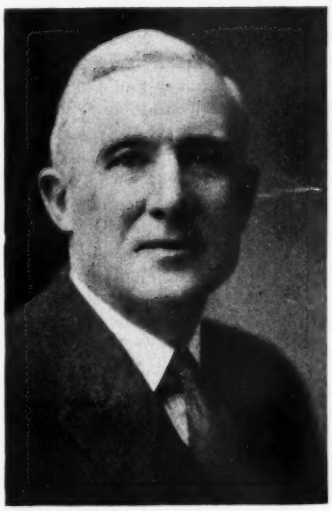
The Divisional Code Authority shall have in addition to the duties and powers conferred upon it by Chapter I hereof, the following duties and powers to the extent permitted by the Act:

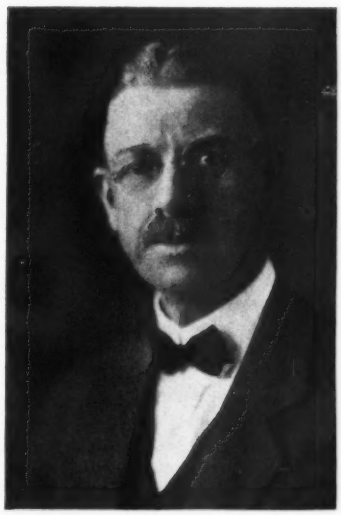
*(a)* It shall have the power to demand the production of pertinent documents, data and accounts, to examine same and in general to attempt to adjust any complaint or violation of this Code. It may provide for its own organization, and may make such rules as to meetings, notices, waivers of notice and other procedural matters as it may from time to time determine; provided, however, that notices of meetings shall be sent to the Administrator and all members of the Construction Code Authority and the Divisional Code Authority sufficiently in advance of such meetings to permit the Administrator or his representatives and all Members of the Code Authority to attend such meetings if desired.

*(b)* It may from time to time require the members of the Division to submit for its own consideration and for transmittal to the Administrator, and to the Construction Code Authority, such reports, statistical data, and other information as it may require. Such information will not be open to inspection except as to totals of the entire Division. The compilation of reports shall be performed by individuals who are not in any way connected with any Member of the Division.

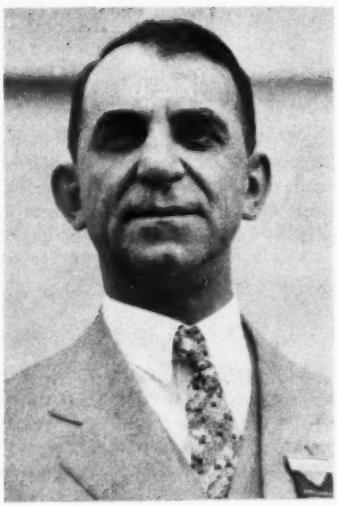
*(c)* In addition to the information required to be submitted to the Divisional Code Authority as set forth in this Article, there shall be furnished to such Federal and State agencies as the Administrator shall designate, such statis-

# *The Seven Members of the Code Authority for Plumbing Contracting*





Above, Robert J. Barrett, Washington, D. C., chairman; at left, George H. Drake, Buffalo, N. Y., and P. W. Donoghue, Boston, Mass.; at right, John J. Calnan, Chicago, Ill., and Charles M. Swinnerton, Los Angeles, Calif. Below, at left, Jere Sheehan, Jr., St. Louis, Mo., and at right, Edward B. Kleine, Cincinnati, Ohio



(Continued from Page 36)

tical information as the Administrator may deem necessary for the purposes recited in Section 3 *(a)* of the Act.

*(d)* Individual reports shall not be disclosed by any employee of such agencies to any person other than a sworn employee of such agencies or of the NRA; nor shall such agencies publish such reports in a manner which will result in the disclosure of the identity of information furnished by any individual firm filing a particular report.

## ARTICLE V. TRADE PRACTICES

The following practices shall constitute unfair methods of competition and are prohibited:

SECTION 1. The secret payment or allowances of rebates, refunds, credits, or unearned discounts, whether in the form of money or otherwise, or the secret extension to certain purchasers of special prices, services, or privileges not extended to all purchasers on like terms and conditions.

SECTION 2. To accept any contract on a "fixed fee basis" or "cost plus basis" with an upset price, protecting the purchaser against higher costs, but not protecting the contractor against losses.

SECTION 3. To permit the loan or transfer of a Plumbing License or to allow anyone to work under a Plumbing License held by another.

SECTION 4. As a member of the industry, or his agent or representative, knowingly to participate in "Bid Peddling" or "Bid Shopping" as defined in Chapter 1 thereof.

SECTION 5. To depart from the following practice in all competitive bidding: All bids submitted shall be the final bids of the bidders and no changes in the amount of any bid shall be made, save only those due to bona fide changes in the plans or specifications, and in such cases changes in the amount of the bid shall be made on the same unit or other basis as the original bid.

SECTION 6. To submit bids on other than the requirements of plans and specifications, when plans and specifications are drawn, provided, however, that the foregoing shall not prevent alternative bids in which divergencies from the original plans and specifications are clearly indicated and described in such alternative bid.

SECTION 7. To fail to file copies of a bid, in excess of a minimum amount to be established by the Divisional Code Authority with the approval of the Adminisrtator, with a depository designated by the Divisional Code Authority.

SECTION 8. To sell any product and/or service below the reasonable cost of such product or service, namely, the cost of materials, plus labor, plus overhead, as determined in accordance with the provisions of Article VI, Section 2 of this Chapter.

SECTION 9. To make or cause or knowingly to permit to be made or published any false, materially inaccurate or deceptive statement by way of advertisement or otherwise, whether concerning the grade, quality, quantity, substance, character, nature, origin, size, finish, or preparation of any product used by the Division or the workmanship, credit terms, values, policies, conduct or services of any member of the Division, or otherwise, having the tendency or capacity to mislead or deceive customers or prospective customers.

SECTION 10. To furnish articles more or less expensive, of better or inferior quality, or of larger or smaller size than specified without making the proper adjustments in the quoted price and clearly identifying the nature of the substitution.

SECTION 11. To give, or permit to be given or to offer to give, directly or indirectly, money or anything of value to agents, employees, representatives, architects, or engineers of purchasers or prospective purchasers for the purpose of influencing their employers or principals or prospective employers or principals to purchase from the profferer or to refrain from purchasing from competitors of the profferer. Nothing herein stated shall be construed to prohibit free and general distribution of articles commonly used for advertising except so far as such articles are actually used for commercial bribery as hereinabove defined.

SECTION 12. To secure confidential information concerning the business of a competitor by a false or misleading statement or representation, by a false impersonation of one in authority, by bribery, or by any other unfair method.

SECTION 13. To engage in the business of the Division without an address.

SECTION 14. When engaged in the work of an employee, to work in excess of the maximum hours provided in Article II, or when so engaged to fail to charge time at least at the established rate of pay for such employee.

SECTION 15. To defame competitors or others engaged in the Plumbing Industry by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations or by false disparagement of their ability or workmanship.

SECTION 16. To install or repair any plumbing system or any part thereof by any person who is not properly licensed, in States, Cities or communities where such licensing is required.

## ARTICLE VI. MARKETING POLICIES

The following practices shall be followed by all members of the Division in the marketing of their materials and services, and deviation from such practices and rules shall constitute unfair competition and is prohibited:

SECTION 1. In order to facilitate the administration of this Code, each member of the Division shall keep his accounts in such manner as to make possible the determination of the cost of doing business as a member of this Division.

SECTION 2. Every member of the Division shall use an accounting system which conforms to the principles of, and is at least as detailed and complete as, the uniform and standard method of accounting set forth in the "Simplified Course of Accounting for Master Plumbers or Heating Contractors," formulated by the Plumbing and Heating Industries' Bureau; and which includes a costing system which conforms to the principles of, and is at least as detailed and complete as the standard and uniform method of costing to be formulated under the supervisions of and approved by the Divisional Code Authority and the Administrator, with such variations therefrom as may be required by the individual conditions affecting any member of the Division, or group of contractors, and as may be approved by the Divisional Code Authority and the Administrator and made supplemental to the Simplified Course of Account or method of costing.

## ARTICLE VII. MODIFICATION

Subject to the provisions of Section 2 *(c)* of Article IV, B, of Chapter I of this Code, the provisions of this Chapter, except as to provisions required by the Act, may be modified on the basis of experience or changes in circumstances, such modifications to be based upon application to the Administrator and such notices and hearing as he shall specify and to become effective on his approval.

## ARTICLE VIII. REFERENCE TO PROVISIONS OF CHAPTER I.

The provisions of Section 7 *(a)* and 10 *(b)* of the Act, which are set forth in Sections 1 and 6 respectively of Article VIII of Chapter I of this Code are specifically incorporated herein by reference with the same force and effect as if set forth herein in full; all other provisions of Chapter I

(Continued on Page 174)

**Fig. 1—Map indicates the sixty-three cities and towns surveyed by the CWA. Arrows point to places included in this partial summary**

# First CWA Summary Shows Big Building Need

*Twenty-five of the sixty-three typical towns and cities surveyed in property inventory form basis of early report of plumbing and heating construction opportunities*

THE creation of the Civil Works Administration has made it possible to carry out a project which for some years has been considered as most important to the construction industry. This project contemplated a survey of the structures in the various cities of the United States with a view to determining their adequacy of numbers, as well as their condition or fitness for the purpose for which used, their equipment, and other pertinent facts.

Funds were obtained from the above-mentioned source for this project which was carried on under the name of the Real Property Inventory. It was first contemplated that all the cities in the United States would be covered by the survey but the time allowed for the field work, which was carried on as a relief measure, was so short that the survey was finally taken in only sixty-three cities, at least one city being in each State and some states having two cities. It was also found that it would be possible only to inventory the residential structures in the cities involved and for this purpose local forces of the CWA were assembled under supervisors and the actual field work was carried out with the cooperation of the Bureau of the Census.

N. H. Engle, Assistant Director, Foreign and Domestic Commerce in the Department of Commerce, is in technical charge of the project, which was placed under the immediate direction of Daniel E. Casey as Project Chief.

The work has now progressed to the point where machine tabulations have been received and preliminary

**Mechanical Equipment of the 271,000 Dwelling Units in 25 Cities as Surveyed by The Real Property Inventory Unit of the Bureau of Foreign and Domestic Commerce Percentage Table**

| Facility | Nashua | Burlington | Hagerstown | Frederick | Greensboro | Asheville | Columbia | Decatur | Paducah | Springfield | Little Rock | Shreveport | Baton Rouge | Fargo | Sioux Falls | Lincoln | Wichita Falls | Butte | Casper | Pueblo | Santa Fe | Albuquerque | Boise | Reno | Phoenix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Heating Apparatus | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Hot Air Furnace | 17.9 | 30.7 | 31.8 | 12.2 | 7.2 | 18.1 | 9.3 | 64.6 | 8.7 | 25.7 | .3 | .0 | .2 | 46.7 | 67.2 | 63.1 | .7 | 11.6 | 19.8 | 32.3 | 4.9 | 25.7 | 25.6 | 26.6 | 5.7 |
| Steam or Vapor | 24.8 | 10.6 | 24.0 | 40.5 | 18.7 | 14.2 | 3.0 | 6.0 | 5.2 | 3.0 | 1.3 | .2 | .8 | 13.4 | 7.2 | 8.2 | 2.1 | 7.7 | 9.3 | 6.5 | 8.7 | 9.5 | 3.6 | 15.6 | 4.4 |
| Hot Water | 2.5 | 13.7 | 10.1 | 8.5 | 1.5 | 8.7 | 5.0 | 5.3 | 2.4 | 5.0 | .4 | .1 | 4.4 | 26.7 | 5.3 | 9.1 | .1 | 7.8 | 6.4 | 2.6 | 1.6 | 4.4 | 12.1 | 4.0 | 1.2 |
| Heating Stove | 52.4 | 43.1 | 33.7 | 38.4 | 55.5 | 50.8 | 37.1 | 23.2 | 74.1 | 65.4 | 95.8 | 97.2 | 49.8 | 11.3 | 19.4 | 18.6 | 95.2 | 70.5 | 63.8 | 56.2 | 82.5 | 52.6 | 55.9 | 52.5 | 82.9 |
| Others | 1.4 | .3 | .3 | .2 | 16.8 | 8.1 | 45.0 | .6 | 8.4 | .3 | 1.9 | 1.3 | 36.8 | 1.6 | .7 | .6 | 1.3 | 2.2 | .0 | 1.4 | 2.1 | 7.6 | 2.6 | .8 | 4.8 |
| None | .0 | .4 | .0 | .0 | .2 | .1 | .2 | .1 | .4 | .2 | .2 | 1.1 | 7.0 | .1 | .1 | .1 | .6 | .1 | .5 | .3 | .1 | .1 | .0 | .0 | .9 |
| Not Reported | 1.0 | 1.2 | .1 | .2 | .1 | .0 | .4 | .2 | .8 | .4 | .1 | .1 | 1.0 | .2 | .1 | .3 | .0 | .1 | .2 | .7 | .1 | .1 | .2 | .5 | .1 |
| Principal Fuel Used | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Coal | 48.5 | 69.6 | 97.0 | 96.3 | 95.6 | 97.8 | 66.3 | 96.8 | 97.8 | 59.8 | 1.4 | .2 | 22.6 | 86.3 | 85.3 | 72.9 | .2 | 68.0 | 44.0 | 93.6 | 34.6 | 72.0 | 89.2 | 62.2 | 34.9 |
| Wood | 14.8 | 6.0 | .2 | 2.4 | 3.1 | 1.4 | 31.3 | .2 | .6 | 30.5 | 26.6 | 6.3 | 21.7 | .5 | 1.1 | 3.1 | 13.1 | 1.7 | .6 | .6 | 34.7 | 6.1 | 5.6 | 11.1 | 47.2 |
| Gas | .5 | .1 | .1 | .0 | .0 | .0 | .0 | 1.4 | .0 | 4.5 | 71.2 | 92.6 | 46.8 | .0 | 7.4 | 12.4 | 84.4 | 27.7 | 52.6 | 4.1 | 30.1 | 20.3 | .0 | .0 | 3.1 |
| Oil | 20.8 | 17.5 | 2.5 | 1.0 | .5 | .3 | .6 | .9 | .1 | 3.5 | .0 | .0 | .8 | 12.6 | 5.1 | 10.2 | .3 | .2 | .2 | .3 | .4 | 1.2 | .8 | 18.9 | 6.9 |
| Other | 13.9 | 6.0 | .1 | .1 | .5 | .2 | .5 | .2 | .1 | .5 | .1 | .0 | .7 | .2 | .5 | .6 | 1.3 | 2.1 | 1.8 | .2 | .0 | .1 | 4.0 | .7 | 5.9 |
| Not Reported | 1.5 | .8 | .1 | .2 | .3 | .3 | 1.3 | .5 | 1.4 | 1.2 | .7 | .9 | 7.4 | 4 | .1 | .8 | .7 | .3 | .8 | 1.2 | .2 | .3 | .4 | 1.1 | 2.0 |
| Lighting | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Gas | .3 | .1 | .2 | .2 | .1 | .0 | 0 | .1 | .3 | 0 | .1 | .3 | .0 | .0 | .1 | .0 | .1 | .0 | .0 | .1 | .0 | .1 | .0 | .0 | .1 |
| Electricity | 95.2 | 97.7 | 94.6 | 87.8 | 82.7 | 80.6 | 64.7 | 92.4 | 68.3 | 85.7 | 78.2 | 71.7 | 70.0 | 97.5 | 94.7 | 97.0 | 83.6 | 97.9 | 90.9 | 90.7 | 74.7 | 87.7 | 96.6 | 96.1 | 91.6 |
| Neither | 3.2 | 1.8 | 4.8 | 11.5 | 17.0 | 19.3 | 33.7 | 6.6 | 30.0 | 13.6 | 21.5 | 27.8 | 27.8 | 1.7 | 2.1 | 2.4 | 16.2 | 1.2 | 8.5 | 8.1 | 25.0 | 11.9 | 3.2 | 2.0 | 7.9 |
| Not Reported | 1.3 | .4 | .4 | .5 | .2 | .1 | 1.6 | .9 | 1.4 | .7 | 2 | .2 | 2.2 | .8 | .1 | .6 | .1 | .9 | .6 | 1.1 | .3 | .3 | .2 | 1.9 | .4 |
| Cooking | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Gas | 64.1 | 75.6 | 53.4 | 44.9 | 32.8 | 18.0 | 39.3 | 78.9 | 29.7 | 50.4 | 73.8 | 91.6 | 55.6 | 82.8 | 80.6 | 80.0 | 84.0 | 29.6 | 86.9 | 36.3 | 32.3 | 60.6 | 21.4 | 28.6 | 76.1 |
| Electricity | .2 | 3.3 | 3.2 | 4.5 | 2.9 | 6.5 | .2 | .2 | 2 | .7 | .1 | .0 | .2 | .2 | 1.8 | .4 | .6 | 10.2 | .5 | 11.5 | 2.8 | .9 | 29.6 | 21.5 | .7 |
| Neither | 34.4 | 20.7 | 43.0 | 50.1 | 64.1 | 75.4 | 58.8 | 20.0 | 68.7 | 48.2 | 25.9 | 8.2 | 42.0 | 16.1 | 17.5 | 19.0 | 15.3 | 59.6 | 12.0 | 50.8 | 64.6 | 38.3 | 48.9 | 48.0 | .8 |
| Not Reported | 1.3 | .4 | 4 | .5 | .2 | .1 | 1.7 | .9 | 1.4 | .7 | 2 | .2 | 2.2 | .9 | .1 | .6 | .1 | .6 | .6 | 1.4 | .3 | .2 | .1 | 1.9 | 22.4 |
| Running Water | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Cold | 31.0 | 30.3 | 30.0 | 37.5 | 45.7 | 32.7 | 40.2 | 21.9 | 41.8 | 47.2 | 20.2 | 34.1 | 59.2 | 8.4 | 25.4 | 18.4 | 22.9 | 19.2 | 14.8 | 21.5 | 15.5 | 13.2 | 12.0 | 6.8 | 32.4 |
| Hot and Cold | 67.2 | 68.9 | 67.8 | 59.0 | 43.7 | 62.3 | 36.2 | 68.9 | 27.8 | 38.2 | 63.8 | 53.6 | 33.9 | 86.5 | 67.5 | 77.3 | 68.4 | 75.7 | 72.5 | 69.7 | 56.0 | 75.5 | 80.3 | 88.9 | 61.0 |
| None | .9 | .4 | 2.1 | 3.3 | 10.5 | 4.9 | 23.0 | 8.9 | 29.6 | 14.2 | 15.9 | 12.2 | 6.3 | 4.8 | 7.0 | 3.9 | 8.7 | 4.9 | 12.5 | 8.3 | 28.3 | 11.2 | 7.7 | 3.8 | 6.5 |
| Not Reported | .9 | .4 | .1 | .2 | .1 | .1 | .6 | .3 | .8 | .4 | .1 | .1 | .6 | .3 | .1 | .4 | .0 | .2 | .2 | .5 | .2 | .1 | .0 | .5 | .1 |
| Private Indoor Water Closets | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| None | 2.8 | 1.7 | 9.9 | 46.6 | 18.5 | 15.6 | 36.5 | 14.3 | 42.8 | 26.9 | 23.7 | 30.8 | 16.1 | 13.8 | 17.9 | 15.8 | 13.9 | 22.5 | 25.1 | 30.0 | 43.8 | 26.1 | 21.0 | 9.9 | 15.0 |
| 1 | 90.7 | 85.6 | 86.3 | 48.5 | 71.8 | 71.6 | 54.2 | 73.5 | 54.0 | 68.2 | 70.0 | 65.5 | 77.7 | 78.1 | 76.6 | 73.8 | 82.3 | 75.1 | 69.0 | 66.8 | 52.4 | 70.9 | 74.1 | 83.9 | 81.1 |
| 2 and over | 5.5 | 12.3 | 3.5 | 4.5 | 9.6 | 12.7 | 7.8 | 6.5 | 1.6 | 4.3 | 6.1 | 3.5 | 4.8 | 7.2 | 5.3 | 9.8 | 3.8 | 2.0 | 5.1 | 1.5 | 3.4 | 2.7 | 4.8 | 4.9 | 3.6 |
| Not Reported | 1.0 | .4 | .3 | .4 | .1 | .1 | 1.5 | .7 | 1.6 | .6 | .2 | .2 | 1.4 | .9 | .2 | .6 | .0 | .4 | .8 | 1.7 | .4 | .3 | .1 | 1.3 | .3 |
| Bath Tubs and/or Showers | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| None | 25.8 | 23.0 | 23.3 | 40.1 | 44.9 | 27.4 | 43.1 | 27.1 | 50.2 | 30.9 | 27.4 | 43.1 | 29.0 | 18.9 | 25.7 | 18.0 | 18.4 | 31.9 | 30.6 | 32.1 | 44.2 | 29.2 | 24.1 | 12.3 | 17.7 |
| 1 | 71.8 | 71.8 | 74.5 | 57.3 | 47.8 | 63.9 | 49.6 | 70.1 | 47.0 | 65.8 | 68.4 | 53.5 | 65.3 | 77.8 | 72.7 | 76.8 | 78.9 | 66.3 | 65.8 | 65.0 | 52.3 | 68.1 | 72.8 | 81.8 | 79.3 |
| 2 and over | 1.4 | 4.9 | 1.8 | 2.2 | 7.2 | 8.6 | 5.7 | 2.1 | 1.2 | 2.5 | 4.0 | 3.1 | 4.3 | 2.4 | 1.4 | 4.6 | 2.7 | 1.3 | 2.8 | 1.1 | 3.1 | 2.4 | 3.0 | 4.6 | 2.7 |
| Not Reported | 1.0 | .3 | .4 | .4 | .1 | .1 | 1.6 | .7 | 1.6 | .8 | .2 | .3 | 1.4 | .9 | .2 | .6 | .0 | .5 | .8 | 1.8 | .4 | .3 | .1 | 1.3 | .3 |
| Mechanical Refrigeration (Occupied units only) | 15.3 | 17.0 | 20.6 | 20.7 | 19.1 | 18.0 | 16.4 | 15.1 | 6.8 | 18.0 | 21.5 | 10.9 | 13.9 | 27.6 | 18.9 | 29.9 | 14.4 | 11.0 | 16.5 | 13.6 | 11.8 | 15.6 | 21.2 | 25.0 | 21.8 |

May 22, 1934

**This summary of information collected in the CWA survey of real property shows in percentages the equipment and facilities found in homes located in the cities listed at the head of the columns**

data have been tabulated for some twenty-five cities which are fairly representative of the various sections of the United States, as indicated on the accompanying map. The balance of the 63 cities which are yet to be tabulated are also noted on the map, while the city symbols used indicate the ranges of size of the cities.

### MAINLY RESIDENTIAL UNITS

Every structure with a residential unit, with the exception of hotels, rooming houses, clubs and summer cottages, was canvassed, making a total for these cities of approximately 270,000 dwelling units. Of these about 68 per cent were in single-family structures and about 13½ per cent in two-family dwellings, approximately 7 per cent being in apartment houses. The remainder are distributed among three and four family houses, row houses and other dwellings.

### THREE-FOLD WAR FOR RECOVERY

Similar comparative data may be found in the accompanying tables. A resume of information secured for each of the first 25 cities, which has been released to the press, can have far-reaching effect as a stimulant to administrative and popular effort in housing reform. A three-way offensive has been launched to effect needed recovery activity in the construction industry. At the same time the home maker is in a position to advance on depression by cooperating with industry to the end of promoting this three-fold war for recovery:

1. Modernization: Man cannot rest secure with outmoded and worn out surroundings and appliances. In a depressed era the purchase of drudgery eliminators and new materials promotes activity.

2. New Construction: Private enterprise must be alert to its opportunity to start new construction, a rebirth of wholesome building activity to keep pace with population and increased social requirements.

3. Slum Clearance and Housing Projects: Social life must recognize unhealthful, obsolete and degenerating housing and services in order to encourage demolition and the rehabilitation of blighted areas.

With such a concerted plan of activity, advancing on all fronts and directed against the common enemy—apathy—the results of this Real Property Inventory research leads the way with its exact and definite information—a cross-section of the construction and equipment needs throughout the country as definitely set forth in the accompanying tables.

Table I shown herewith lists the cities for which data have been released to date; their population, number of units occupied, number of units vacant and the percentage of vacancy.

Table II shows clearly the average facilities now obtainable in properties in the 25 cities tabulated. These percentages are not entirely comparable since climatic conditions vary materially for such services as listed. However, readers will find valuable data in convenient form for their use. For example, Shreveport, Little Rock and Wichita Falls are localities using stoves for heating primarily, while hot air furnaces predominate in Decatur and Sioux Falls. Frederick, Md., shows a marked preference for steam or vapor heat. Coal constitutes 97 per cent of the fuel used in Hagerstown, Asheville and Paducah, while practically none is used in Shreveport and Wichita Falls, in which cities gas is the principal fuel. In general, lighting is by electricity but in many localities neither this nor gas may be had. It is surprising to note that 29 per cent of the dwelling units in Paducah have no running water, and Santa Fé is a close second with 28 per cent not provided with this facility. The homes of Frederick seem to have the least equipment of indoor water closets, showers and baths, 46 per cent having none, which is undoubtedly due to the fact that the age and permanency of the structures have discouraged alterations. Our survey shows that 71 per cent of this city's structures are built of brick and 19 per cent were built prior to 1860.

Manufacturers and dealers in refrigerating apparatus will be pleased to find that in such cities as Paducah, Shreveport and Butte there is a possibility of an enlarged market for their products.

**Occupied and Vacant Dwelling Units in 25 Cities***

| Cities | 1930 Population | Dwelling Units | | | | |
|---|---|---|---|---|---|---|
| | | Groups Occupying | | Vacant | | Total |
| | | 1930 Census | 1934 R. P. I. | Number | Per Cent | |
| New Hampshire | | | | | | |
| Nashua | 31,463 | 7,593 | 7,563 | 406 | 5.1 | 7,969 |
| Vermont | | | | | | |
| Burlington | 24,789 | 6,001 | 6,278 | 340 | 5.1 | 6,618 |
| Maryland | | | | | | |
| Hagerstown | 30,861 | 7,686 | 7,718 | 431 | 5.3 | 8,149 |
| Frederick | 14,434 | 3,694 | 3,694 | 91 | 2.4 | 3,785 |
| North Carolina | | | | | | |
| Greensboro | 53,569 | 11,474 | 11,586 | 475 | 3.9 | 12,061 |
| Asheville | 50,193 | 11,965 | 11,157 | 1,427 | 11.3 | 12,584 |
| South Carolina | | | | | | |
| Columbia | 51,581 | 11,184 | 11,557 | 631 | 5.2 | 12,188 |
| Illinois | | | | | | |
| Decatur | 57,510 | 15,395 | 15,416 | 991 | 6.0 | 16,407 |
| Kentucky | | | | | | |
| Paducah | 33,541 | 8,743 | 8,514 | 515 | 5.7 | 9,029 |
| Missouri | | | | | | |
| Springfield | 57,527 | 15,641 | 15,421 | 779 | 4.8 | 16,200 |
| Arkansas | | | | | | |
| Little Rock | 81,679 | 20,026 | 18,492 | 1,699 | 8.4 | 20,191 |
| Louisiana | | | | | | |
| Shreveport | 76,655 | 19,997 | 20,206 | 1,666 | 7.6 | 21,872 |
| Baton Rouge | 30,729 | 7,567 | 7,196 | 496 | 6.4 | 7,692 |
| North Dakota | | | | | | |
| Fargo | 28,619 | 6,612 | 6,993 | 474 | 6.4 | 7,467 |
| South Dakota | | | | | | |
| Sioux Falls | 33,362 | 8,223 | 8,946 | 294 | 3.2 | 9,240 |
| Nebraska | | | | | | |
| Lincoln | 75,933 | 20,161 | 21,448 | 1,794 | 7.7 | 23,242 |
| Texas | | | | | | |
| Wichita Falls | 43,690 | 11,702 | 9,834 | 888 | 8.3 | 10,722 |
| Montana | | | | | | |
| Butte | 39,532 | 10,199 | 9,025 | 1,702 | 15.9 | 10,727 |
| Wyoming | | | | | | |
| Casper | 16,619 | 4,637 | 4,922 | 697 | 12.4 | 5,619 |
| Colorado | | | | | | |
| Pueblo | 50,096 | 12,321 | 11,672 | 1,051 | 8.3 | 12,723 |
| New Mexico | | | | | | |
| Santa Fe | 11,176 | 2,608 | 2,491 | 229 | 8.4 | 2,720 |
| Albuquerque | 26,570 | 6,783 | 7,223 | 597 | 7.6 | 7,820 |
| Idaho | | | | | | |
| Boise | 21,544 | 5,887 | 6,157 | 320 | 4.9 | 6,477 |
| Nevada | | | | | | |
| Reno | 18,529 | 5,018 | 5,433 | 761 | 12.3 | 6,194 |
| Arizona | | | | | | |
| Phoenix | 48,118 | 12,558 | 13,365 | 1,027 | 7.1 | 14,392 |
| Total 25 Cities | 1,008,319 | 246,895 | 252,307 | 19,781 | 7.8 | 272,088 |

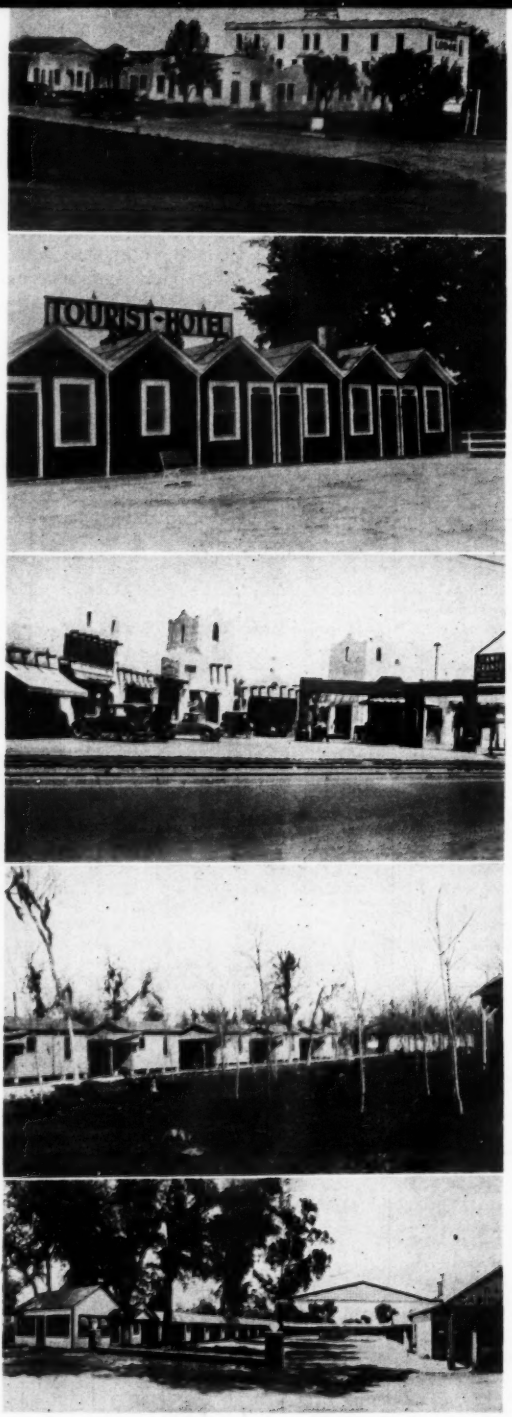
*Data collected and compiled by the Real Property Inventory Unit, Bur. of For. & Dom. Commerce, May 22, 1934.

**The vacancy situation in the twenty-five cities is illustrated in this table. Considering those dwellings unfit for human habitation and taking into account single homes now housing two or more families, it is apparent that the vacancy percentages will change to shortages with a normal demand**

## ASSURANCE OF STIMULATED ACTIVITY

At present, it is only possible to guess at the ultimate value of the Real Property Inventory, but assuming even a partial success of the objects of the Administration, the manufacturers and dealers are assured of marked stimulation to activity in their lines. The home occupies the greatest part of a city's area and constitutes its major taxable value and the largest share of the families' time and effort. As a result attention is directed toward it and effort in its behalf cannot long remain unheeded or unheralded. Through a concerted effort an apathetic public sentiment can be aroused by facts of real and immediate concern to it thus preparing the way for an improved consumer attitude, and for the correction of existing conditions and the alteration in or consumption of the country's marketable goods related to homemaking.

At the end of the war the housing shortage stimulated a building boom which has resulted in what is considered by some as a present housing surplus. The R.P.I. proves this supposed surplus to be artificial and that a real shortage may be imminent by virtue of the present doubling up of families and the considerable number of structures unfit for occupancy taking into consideration the proper level of American living.




The upper illustration shows a combination hotel and tourist camp located at Abilene, Texas

The second view is of a bungalow auto camp located in Missouri. Below that is what is known as the oldest and largest camp in El Paso, Texas. This is a complete community having drug store, grocery, garage, and private police department

The next to the bottom view shows a camp in Beaumont, Texas, while the bottom picture illustrates another good camp

# Motoring Public *demands new standards of* Plumbing *and* Heating Comfort

By A. E. Holden

Is there a tourist cabin camp in, or near your town? Possibly there are a dozen—many cities have even more than that.

What's this got to do with the plumbing and heating business, you ask—just this—These camps represent a potential market the amount of which depends upon the location and conditions.

To understand this field, you will want all the facts about this nation-wide travel-housing industry that began in 1923 with half a dozen shacks. In just a little more than ten years, 25,000 establishments with approximately 500,000 units have come into practical operation.

The first wayside cabins, and those which followed for about seven years, were just little shacks about 8 ft. by 10 ft. furnished with a good used bedstead, a cheap mattress, a pair of fifty-cent chairs, a rusty stove and a wash-basin as the plumbing fixture. Usually a building on the lot housed a community shower bath and public toilets, the sanitary standards of which might well be questioned.

The entire cost, including furnishings such as they were, usually did not exceed $150 each, yet motorists rich and not so rich alike, by the scores of thousands, took to them—at first for the novelty, later for convenience, privacy and economy.

America has 1,000,000 miles of roads, 250,000 of

which are fair, 150,000 first class. With better and faster cars, the average vacation trip has leaped from 300 miles to 600 miles in the last ten years, while the 3,000 mile round trip in two weeks is no longer a novelty. Two may travel from coast to coast without sacrificing a single comfort for as little as two and a half cents a mile, or about $8.00 a day, or in luxury for $14.00 a day.

In this country it was as natural for wayside cabin camp operators to expand and modernize as it was to cover our highway sink-holes and dustbeds with interminable ribbons of concrete, or for car manufacturers to develop better and faster cars with each passing year. But there is this difference: Just as the cabin camp originated in California and spread like wildfire over vast sections, first in the West, South and Southwest, later through the East, Middlewest and North, the larger, more luxurious modernized establishment also first originated in States having all year climates. Now if we buy a 1934 automobile in the East, West, North or South, each buyer will get the same modern, efficient car, but, if these same buyers start across country with the purpose of stopping at cabin camps, they will find a divergence of quality as vast as the difference between a 1934 and a 1904 motor car.

Out of the 25,000 wayside establishments, many have 50 to 100 cabins, and up to 200. The average is estimated to be 20 units; 15,000 establishments are classed as fair, 5,000 first class. These units will accommodate 3,000,000 people at one time. Nation-wide surveys prove that thousands of motorists are turned away from modern establishments nightly in the travel season because of inadequate accommodations, while many non-modern, under sized cabins go begging for patrons.

Why do people patronize these better wayside travel homes? To avoid city traffic jams in strange places, to have freedom of the open country, convenience, speed and economy. But once the traveler stops in a court that provides a private bath, tub or shower, hot and cold water, a toilet, kitchenette with white porcelain sink and running water, gas or electric ranges, a large living room, well furnished, soft beds, steam or gas heat, with a private locked-in garage, all for about $2.00 a night for two people, he will no longer tolerate the obsolete shack by the side of the road. If these obsolete establishments are to survive and prosper *again,* they will be forced to enlarge and modernize, just as many of them *are* doing today. Demand for travel comfort is doing it.

To illustrate this point, a few references will suffice. Five years ago a dozen or more nondescript camps adorned the suburbs of Dallas, Texas. Now a sixty-unit court provides every luxury that travelers could wish for at a cost of $1.75 a day per person. In El Paso scores of modern auto courts line the suburban highways giving class A accommodations at $1 to $2 a day per person. In Galveston there is a 104-apartment establishment. Up and down the West Coast—Arizona, New Mexico, Oklahoma, Utah, Nevada, and many other sections, one will find the $25,000 auto court a commonplace, and some costing upwards to $150,000.

The Motel at Bakersfield has installed an air conditioning cooling system. Information is that this system will be extended into 18 new units now being constructed,

At the top is a row of cabins at Detroit Lakes, Minnesota. A good exterior invites the motorist to stop and good plumbing causes him to stay

Second from the top is a view of one of the many modern courts at Fort Worth, Texas

What is listed as one of the first cabin camps in Southern Florida, is pictured at the left

This camp at Houston, Texas is said to have started with thirty-six units and later enlarged to seventy-two units. They have baths, toilets and kitchenettes

At the bottom is a tourist camp at Fort Smith, Arkansas

by means of booster fans from the main underground plant. This addition has been made necessary to care for commercial traveling men who are now patronizing auto courts in increasing numbers. The Las Palmas Courts, a camp at El Centro, California, has 20 hotel apartments and 20 with kitchenettes, each of these being equipped with electric refrigerators in addition to all other modern furnishings, bath, toilet and fixtures equalling those of class A hotels throughout.

### MOTORISTS LOOK FOR COMFORTS

On a recent cross country trip, tired out from a long day's drive, the writer was ready to turn in at sunset. I inspected half a dozen camps just west of Kansas City. Not one of them was modern. Tired as I was, I drove on through 20 miles of city traffic after dark. About nine miles out I saw an Auto Camp advertised. Inspection showed a large beautiful room, elegantly furnished, but best of all there was another room adjoining. It contained a modern bath tub, lavatory and toilet. Here I could obtain the fatigue-removing qualities that only a hot bath can provide.

This is what is going on every day in every section of the country. Motorists will and do drive 50 to 100 miles further to find a modern place to stay. Many operators are learning these facts and are enlarging and modernizing. As new units are added the $100 non-modern shack is being replaced by the $500, $1,000 to $5,000 unit in which modern plumbing forms a vital, necessary part. This opens a potential installation for plumbing fixtures and for heating plants. By the same token, it opens sales possibilities for gas or electric ranges and refrigerators and other smaller, but no less profitable appliances.

Operators in northern sections claim with some degree of logic that their three to five month travel season will not justify the expense of installing modern equipment. This however, is only an unwillingness to face facts. Motorists of the North go South and West in winter. The heated, modernized wayside court of the North can bid for and get this winter travel money and from commercial men. The suburban court in larger cities can rent cottages to permanent guests during winter months. This is not a theory, but a fact in practice. Besides, summer season travel alone sooner or later must enforce modernization.

With the facts in mind that cross country travelers and vacationists are mostly well-to-do people who have and enjoy modern facilities at home, will insist upon having the same privileges away from home, it is not overestimating the possibilities to say this is a potential new market for plumbing and heating for existing establishments. With even better roads and better cars in the offing, the motor travel industry points to the day when hotel organizations and individual operators will have 50,000 or more modern establishments in suburban sections along the nation's highways to accommodate our vast army of motor travelers at low cost.

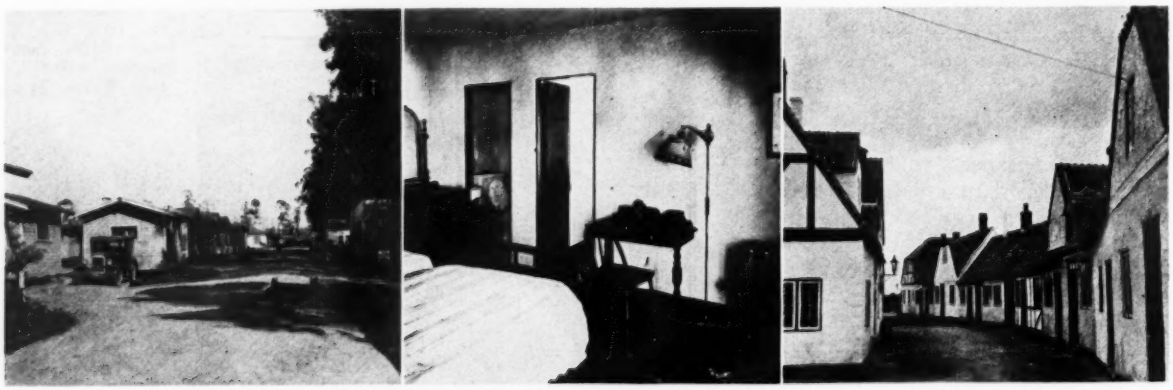
### SEASON FOR IMPROVEMENTS

Now is the time to visit your local wayside establishments, and sell them the idea—the necessity of modernizing to get and hold this travel harvest, and thereby increase your own sales and profits.

Information on the opportunities in tourist camp plumbing and heating installations comes from another source and points out that, "As to the number of tourist camps in the country, there are some 200,000 stands of all types along the highways but only about 15,000 to 20,000 are of the better kind. However, purely aside from a statistical nature, we know that a whale of a lot of camps either have no modern plumbing facilities at all, or such facilities as they may have are wholly inadequate. The same is true of water supply.

"In contrast to camps which need both plumbing and water supply equipment, in many sections of the country, particularly the South, the Southwest and the Pacific Coast, we find the most wonderfully equipped tourist lodges, with their own sewerage and water supply systems, modern plumbing, showers and hot and cold running water in each cabin, electric light, comfortable beds and furnishings. Some of these latter camps represent investments of as much as $250,000."

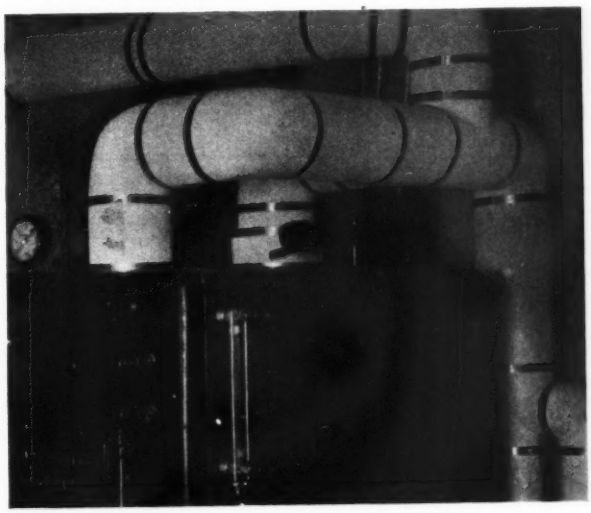
These improvements are pointed out on the basis of what has been done can be done. If others have improved their camps and found the investments profitable, then still others can be sold on the idea of doing likewise.



**The view at the left shows one of the older cottage camps for tourists in Los Angeles, Calif. The middle view shows the interior facilities at the Mission Bell auto camp at Ventura, Calif. The illustration at the right shows a newly constructed group of cottages**

# Is the Heating Boiler Dirty on this Trouble Job?

*A dirty boiler, in its operation, is about the most misleading of all trouble causes. This one presents many of the ordinary symptoms*



By Wm. W. Stevens

THE following typical letter from a contractor suggested this article:

"We have a steam boiler, used in connection with a vapor heating system.

"Our trouble is that we can start the fire with water at water line, which is about one-half way on the glass but after the fire has burned a short time, the water glass will be full. Shut off the fire and the water glass will be completely empty.

"Please tell us how to remedy this matter. We think the boiler is clogged, but are not sure.

"This job has been operating satisfactorily for about fifteen years."

Before making any definite suggestions, it should be understood that there may be some conditions about this installation with which we are not acquainted and which might modify our suggestions.

The fact that the boiler in question operated satisfactorily, up until this last heating season, indicates that there is nothing fundamentally wrong with the system. To make a definite solution of the problem, there is one thing which we should know and that is, does the water line in the boiler come back to normal after the fire has been banked for some little time? In other words, when steam is no longer being produced because of a banked fire, does water flow back into the boiler and bring the water line up to normal? If this is the case, then we should say that the cause of the difficulty is that there is a very dirty boiler which results in excessive foaming. This opinion is supported by the statement to the effect that when the fire is started, the water glass becomes filled. We interpret this as meaning that the excessive foaming in the boiler raises the water line in the gauge glass. When foaming occurs, particles of water are carried into the steam mains and radiators with the steam. Obviously, an abnormal amount of water is used up in the boiler. Then, when the fire is checked quickly so that boiling and foaming stops, the surface of the water in the boiler becomes quiet, but so much water has been passed over into the piping and radiators that its level is reduced below the gauge glass.

Now, under normal operation, provided there are no obstructions in the return system, the condensate and water carried by the steam should drain back to the boiler and bring the water level up to normal. This should be checked to see if this is what happens.

Under these circumstances, the solution of the problem is to clean out the boiler. The best practice is to raise the level of the water in the boiler to the top blow-off connection and crack the water supply valve just enough to cause the water in the boiler to overflow through this connection which should be piped to a drain. This will skim off the grease and oil or other foreign matter on the surface of the water. Obviously, the water in the boiler should be hot in order to prevent any grease in the water from solidifying. After all of the impurities have been skimmed off, as evidenced by a clear flow of water through the blow-off connection, the general practice is to raise steam in the boiler and blow it out through the bottom blow-off connections. When extremely dirty boilers are encountered, very often it is necessary to repeat this cleaning procedure a number of times.

# How to Size Water Supply Piping for Homes

By F. M. Dawson

*Professor, Hydraulic and Sanitary Engineering, University of Wisconsin*

EXTENSIVE experiments on friction loss in pipes, fittings, and fixtures have been made in the Hydraulic Laboratory of the University of Wisconsin during the past three years. These experiments have been correlated with studies and investigations of other organizations, and the results combined in the form of Bulletin No. 77 of the University of Wisconsin Engineering Experiment Station.

It was the purpose of this bulletin to present a logical method for the design of interior water supply piping for buildings, and was primarily written for those engaged in plumbing work, who have a limited knowledge of the theory of hydraulics. While the treatment is from the practical standpoint, nevertheless, a sound theoretical basis is preserved throughout.

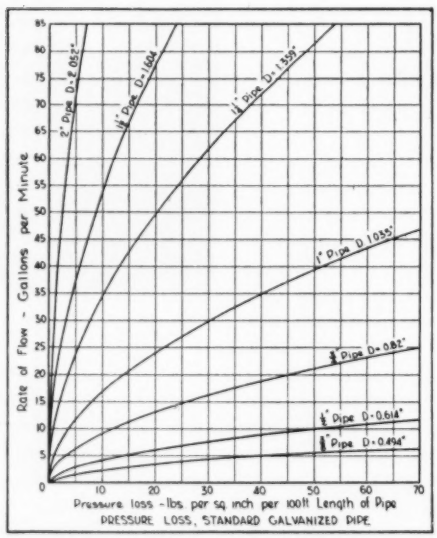

Rate of Flow - Gallons per Minute
2" Pipe D=2.067"
1½" Pipe D=1.604
1¼" Pipe D=1.359"
1" Pipe D 1.035"
¾" Pipe D=0.82"
½" Pipe D=0.614"
¾" Pipe D=0.494"
Pressure loss - lbs. per sq. inch per 100 ft Length of Pipe
PRESSURE LOSS, STANDARD GALVANIZED PIPE

**Fig. 1—This set of curves shows the pressure loss in galvanized iron pipe**

The outstanding difficulties of the interior water supply problem are not primarily theoretical. They are facts with which every plumber should become familiar, such as: (1) What constitutes an adequate and satisfactory supply of water for a given fixture? (2) What fixtures of the total number installed in a building can reasonably be assumed to be in use at the same time?

The question of what constitutes a satisfactory supply rests solely upon the rate of flow which will meet the demand of human convenience. If a consumer must wait to the point of impatience for a receptacle to fill, the rate of supply is inadequate. This is at the bottom of most complaints of poor service.

Throughout this article the supply to a fixture will be spoken of as *rate of flow in gallons per minute*. This considers not only the volume, but the volume which will flow in one minute. For example, if one gallon flows into a fixture in 12 seconds; 2.5 gallons in 30 seconds; and 4 gallons in 48 seconds; the volume is different in each case, but if the flow had continued for 60 seconds at the same rate the final volume would have been 5 gallons; and, therefore, the rate of flow in each instance is 5 gallons per minute.

In 1929, the United States Department of Commerce issued a report called, "Recommended Minimum Requirements for Plumbing." This was the result of several years of study by a committee of men nationally prominent in the plumbing field, and in co-operation with master plumbers throughout the country and with the Bureau of Standards which conducted extensive experiments on full size installations.

As a result of this research, the rate of flow in gallons per minute, expressed in fixture units of 7.5 gallons per minute, is recommended for use in designing the waste pipe capacity from fixtures. A tabulation of fixture units as recommended for various fixtures is given on page 32 of the Department of Commerce Report. These recommendations were based on two considerations: (1) The desirable rate at which a given fixture should be emptied. (2) Sufficient capacity to provide for the possible rate of supply to the fixture, with a margin of safety.

The report does not, however, consider the question of supply of water to a fixture in a definite manner. The following is quoted from Sec. 72, Art. VI, page 28 of the report referred to above: "The water service pipe of any building shall be of sufficient size to permit a continuous ample flow of water on all floors at a given time." However, no hint is given as to what constitutes an ample flow.

As one factor in determining the rate of flow for sup-

*Bulletin No. 77, University of Wisconsin Engineering Experiment Station may be had from the University Editor at Madison, Wis. for 25 cents.

ply to a fixture, it appears that this rate should have a rather definite relation to the capacity of the drain. In an effort to determine the actual rate of flow which constitutes a satisfactory and ample flow, several hundred individuals have been asked for personal tests and expressions of opinion as to whether the rate of flow recorded in the tests was satisfactory. After a thorough consideration of various opinions, and after several hundreds of tests, it was decided that for general average conditions the rate of flow to each fixture should be approximately equal to *two-thirds* of the discharge rate for the waste pipe draining the fixtures as recommended in the Department of Commerce Report.

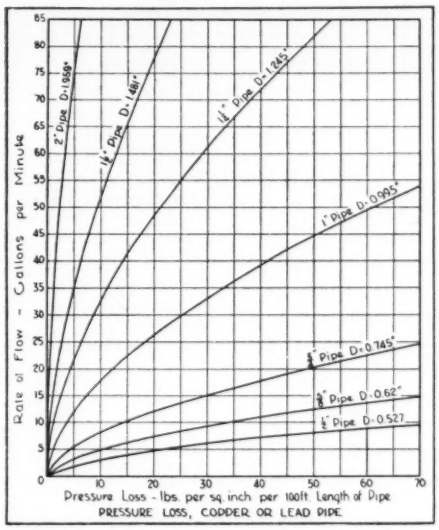

Rate of Flow - Gallons per Minute
2" Pipe D-1.939"
1½" Pipe D-1.481"
1¼" Pipe D-1.245"
1" Pipe D-0.995"
¾" Pipe D-0.745"
½" Pipe D-0.62"
¾" Pipe D-0.527"
Pressure Loss - lbs. per sq. inch per 100ft Length of Pipe
PRESSURE LOSS, COPPER OR LEAD PIPE

**Fig. 2—Pressure loss curves for lead and copper pipe are shown here**

Accordingly, Table I has been prepared on this basis. Column 1 of this table shows Minimum Recommended Rates of Flow in gallons per minute for supply to a given fixture. These are in most cases equal to two-thirds of the rate of flow for waste pipes recommended in the Department of Commerce Report. The second column in Table I gives the rate of flow for individual faucets, either hot or cold branch lines when both serve the same fixture.

## SIMULTANEOUS USE OF FIXTURES

The second problem confronting the engineer, or plumber, is to determine the number of fixtures which may reasonably be expected to be in operation at the same time. This factor is equally as important as the supply to each fixture. It is, of course, possible that the majority of fixtures in a building may be in use simultaneously, but this is a rare occurrence and one for which small flows must be tolerated, or better judgment exercised in the use of the fixtures.

In any combination for simultaneous use the sill cock for lawn sprinkling or use in the garden always will be one fixture to be considered. Where sprinkling occurs in the morning hours, the laundry trays may be in use. A lavatory may be in use at any time, and dissatisfaction with low flow is apt to occur first at this fixture, since it is located on the second floor where the pressure is lowest.

Table II shows a tabulation, for various typical residential buildings, of the fixtures installed; the total rate of flow in gallons per minute for the entire installation; and the rate of flow in gallons per minute for those fixtures assumed to be in simultaneous use. In this tabulation, each fixture is assumed to have a certain number of gallons per minute rate of flow whether one or two faucets of that fixture are running, as shown in Table I, column 1. Accordingly, in determining the loss of pressure in *service or main supply pipes,* instead of assigning a rate of flow to each faucet, it is assigned to the entire fixture and the entire flow assumed to be from either the hot or cold faucets of all fixtures in simultaneous use. Table II is based on the use of tank type water closets. The high rate of flow necessary for the flush valve type, leads to poorly distributed flow where the total number of fixtures is small, unless extra large size pipes are used.

As the cost of extra size piping must be borne by the householder, he is naturally interested in a reasonable balance between the cost and the convenience of his service. A small additional expense for large piping will often eliminate possible sources of dissatisfaction to the consumer.

A very common source of trouble in water piping is an improper distribution of flow to the various fixtures. In other words, because of a better design of faucet, the nearness to the service, an oversize pipe, or a lower elevation, one fixture may "hog" the water at the expense of others.

Much can be accomplished by the use of proper size piping to distribute the flow properly and also by using valves in supply pipes of fixtures to allow more exact adjustment and at the same time permit the ideas of different consumers to be more nearly satisfied. The proper procedure is, of course, to design the entire system as closely as possible for the proper rate of flow at any fixture when operating simultaneously with a reasonable number of others, paying particular attention to the highest or most critical fixture.

When water flows through a pipe, friction is always developed between the water and the interior surface of the pipe and between the particles of water themselves. Pressure is required to overcome this friction and therefore in passing along a pipe, from the entrance into the pipe system,

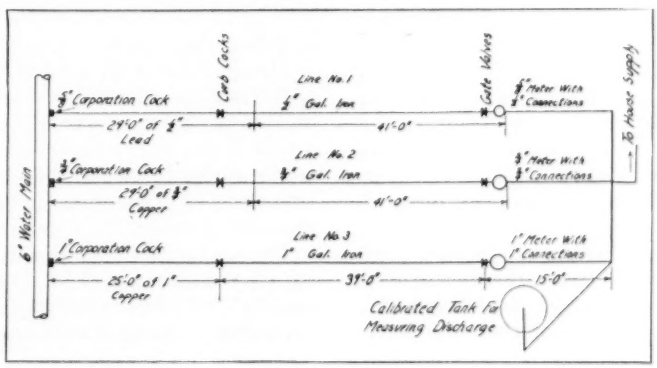



**Fig. 3—Diagram of laboratory set up at University of Wisconsin similar to residence installation**

the pressure gradually decreases by the amount required to overcome the friction.

The loss of pressure in a pipe due to friction depends primarily on four things:

1. Roughness of the pipe.
2. Velocity of water.
3. Diameter of the pipe.
4. Length of pipe.

Fig. I shows the pressure loss in pounds per square inch for 100 ft. of galvanized iron pipe in good condition, corresponding to various rates of flow in gallons per minute. Fig. 2 gives the same information for lead and copper pipe. The pressure loss in shorter or longer pipes will be in the same proportion to the pressure loss shown on these diagrams as the length of the given pipe is 100 ft.

Each fitting, valve, or fixture in a pipe causes additional pressure loss which must be added to the loss occurring in the pipe itself. As the better types of standard fittings are quite uniform in dimensions and roughness characteristics, the loss of these can be quite definitely stated with little qualification. On the other hand, there is such a great variation in design of meters, valves, and fixtures that the loss in a given size may vary as much as 100 per cent. *The results of tests cannot be expected to apply to the extremely small, rough, and tortuous passages commonly found in cheap and poorly designed fixtures.*

**Table I**

**Minimum Recommended Rate of Flow Supplying Various Fixtures in Gallons per Minute**

| Fixture | Gallons per Minute for House Service or Main Supply Lines | Rate of Flow for Individual Faucets Hot or Cold Branch Lines |
|---|---|---|
| Sill Cock | 5.0 | 5.0 |
| Laundry Tray | 10.0 | 6.0 |
| Kitchen Sink | 7.5 | 4.5 |
| Lavatory | 5.0 | 3.0 |
| Bath Tub | 10.0 | 6.0 |
| Shower Bath | 7.5 | 4.5 |
| Water Closet: | | |
| Tank Type | 2.5 | 2.5 |
| Flush Valve Type | 40.0 | 40.0 |

The pressure loss in practically all fittings and fixtures varies as the square of the rate of flow. Accordingly, if the loss of pressure for a certain rate of flow through a valve or fixture is known, the loss for twice that flow will be as the square of two, or four times the loss in the first instance. On the other hand, the loss for one-half that flow would be as the square of one-half, or one-quarter.

## EQUIVALENT LENGTH OF PIPE

In obtaining the friction loss through a given length of pipe containing various fittings it is most convenient to express the pressure loss due to various fittings in equivalent length of pipe. For example, the pressure loss in a ¾-in. elbow may be expressed as 1.7 ft. of equivalent length of ¾-in. pipe. By expressing the pressure loss in this manner for the common standard fittings, the length of pipe which will cause the same pressure loss as the fittings can be added to the length of straight pipe. Using the sum of the actual length and the extra lengths equivalent to the fittings, the corresponding pressure loss for any rate of discharge will be the pressure loss in straight pipe together with the loss in the connecting fittings.

In order to give a clearer idea of how the data given above should be used, a simple problem will be worked out on a house service pipe. In the laboratory of the University of Wisconsin there is an experimental set-up of a house water-supply system which includes three 80 foot lengths of house service pipe with various fittings. Fig. 3 shows this set-up in detail. No. 1 line contains a length of ½-in. lead and ½-in. galvanized iron. No. 2 line has ¾-in. copper and ¾-in. galvanized iron. No. 3 line has 1-in. copper and 1-in. galvanized iron.

**Table II**

**Simultaneous Use of Fixtures in Small Residential Buildings. Rate of Flow in Gallons per Minute**

| Type of Bldg. | Fixtures | Total G.P.M. All Fixtures | G.P.M. for Fixtures in Simultaneous use |
|---|---|---|---|
| Small Single Family House | 2 Sill Cocks | 10.0 | 5.0 |
| | 2 Laundry Trays | 20.0 | 10.0 |
| | 1 Kitchen Sink | 7.5 | ... |
| | 1 Lavatory | 5.0 | 5.0 |
| | 1 Bath Tub | 10.0 | ... |
| | 1 Water Closet | 2.5 | ... |
| | | 55.0 | 20.0 |
| Large Single Family House | 2 Sill Cocks | 10.0 | 5.0 |
| | 2 Laundry Trays | 20.0 | 10.0 |
| | 1 Kitchen Sink | 7.5 | ... |
| | 3 Lavatories | 15.0 | 5.0 |
| | 3 Water Closets | 7.5 | 2.5 |
| | 2 Bath Tubs | 20.0 | 10.0 |
| | | 80.0 | 32.5 |
| Two Family Flat | 2 Sill Cocks | 10.0 | 5.0 |
| | 4 Laundry Trays | 40.0 | 20.0 |
| | 2 Kitchen Sinks | 15.0 | 7.5 |
| | 2 Lavatories | 10.0 | 5.0 |
| | 2 Water Closets | 5.0 | 2.5 |
| | 2 Bath Tubs | 20.0 | ... |
| | | 100.0 | 40.0 |
| Four Family Apartment | 2 Sill Cocks | 10.0 | 5.0 |
| | 6 Laundry Trays | 60.0 | 30.0 |
| | 4 Kitchen Sinks | 30.0 | 15.0 |
| | 4 Lavatories | 20.0 | 10.0 |
| | 4 Water Closets | 10.0 | 5.0 |
| | 4 Bath Tubs | 40.0 | ... |
| | | 170.0 | 65.0 |
| Six Family Apartment | 2 Sill Cocks | 10.0 | 5.0 |
| | 8 Laundry Trays | 80.0 | 30.0 |
| | 6 Kitchen Sinks | 45.0 | 21.5 |
| | 6 Lavatories | 30.0 | 15.0 |
| | 6 Water Closets | 15.0 | 5.0 |
| | 6 Bath Tubs | 60.0 | 10.0 |
| | | 240.0 | 86.5 |

Note: All Water Closets assumed to be of the Tank Style.

*Editor's Note:*

This is the first of a series of articles on the subject of the design of interior water supply piping for buildings based on investigations of the University of Wisconsin Experiment Station and on subsequent experiments at the hydraulic and sanitary laboratory at the University of Wisconsin, which were conducted for checking purposes.

The next article of this series will show the working out of the simple problem mentioned in the foregoing and also will show the application of research data to the sizing of house service pipes.

# Sales Quotas and Planned Programs bring Results

*Consciously or unconsciously, sales efforts are being directed where the prospects are best. Sales quotas form the conscious application of this idea to make efforts most effective*

When you build or Remodel
SHOWERS are the modern bath
IF YOU'RE planning to build a home, or remodel one, this season, don't overlook the most modern of all baths—a shower cabinet. WEIS Shower Cabinets are inexpensive leak-proof units that can be readily fitted into any floor plan.
For an extra bath, if you're planning one, the shower cabinet is particularly recommended. First of all, it requires less floor space, and secondly it gives you a choice of tub or shower bathing, if your present bath is tub equipped, and you'll prefer the shower when you've tried it.
We'll be happy to help you with your plans and show you how a WEIS Cabinet can fit into your picture. It costs you nothing to come in or telephone for information.
WEIS SHOWER CABINETS for the Quick Clean Bath
John M. Forhecz
200 Division Avenue
Garfield, New Jersey

**Fig. 1—Sales helps for contractors also are designed to make sales efforts most effective. This advertisement is one of a series worked out on a definite plan**

FOR a number of years DOMESTIC ENGINEERING has published for the use of manufacturers each year its "Plumbing and Heating Market Possibilities by States," the first page of which is reproduced herewith. This publication consists of a page showing the figures used in arriving at the sales indices for each state. That is, by using such factors as population, number of dwellings, income, building contracts awarded, number of wholesalers and number of plumbing and heating contractors, and combining these in accordance with good statistical practice, there is set up for each state the percentage of total business volume which it should produce.

This page is followed by a convenient "Sales Quotas" sheet, which the manufacturer may use in setting up quotas for his sales force. On this sheet is a column showing the percentage which the state should represent in his sales totals, what that percentage would be in dollars. Alongside of this is a column for actual sales, so that comparison may be made. The last column is for the use of the manufacturer in setting down the quota for the new sales period in each state.

On the fourth page is a compilation of shipment and production figures. Because so much of the present thinking on recovery is based on returning to 1926 levels, the 1934 Sales Quota Sheet carries shipping and production figures from 1926 to 1933 inclusive.

Some of the comments of manufacturers who have received this new sales quota record will be of interest to those who are planning forward. L. R. Snelling, National Radiator Corporation, Johnstown, Pa., writes: "In working up our quotas for 1934, they have been of great value, both in the allotment of quotas and the rearrangement of certain territories. It is impossible for me to give you any record of past effectiveness, but I believe that in 1935 we will be able to answer this more in detail. Had we known that these were published in the past, I feel quite sure we would have had a detailed report for you that would be interesting."

D. L. McDonald, of A. Y. McDonald Mfg. Co., Dubuque, describes his company's use of the Sales Quota Sheet as follows: "We use this quota sheet in the determination of the territories to be covered by our representatives. In this way we are able to determine the number of states which should be covered by one salesman in order that he may secure a decent volume. At the same time, we are able to give our salesmen the sales possibilities of the various states which they cover, so they may concentrate on the states giving the greater volume, and see that they get their share of it."

From two directions come evidence of the value and soundness of the method followed in building the Sales

Quota Sheet. J. H. Jewel, Manager, Building Section, Westinghouse Electric & Manufacturing Co., Philadelphia, Pa., writes: "We feel that your system of arriving at an index is a very logical one and this information should prove invaluable to equipment manufacturers interested in this particular field."

Even more striking is a section in "The Economics of Marketing," by Prof. Hugh B. Killough, published by Harper & Brothers. Under the heading, "Location and Measurement of Potential Market," the book quotes the experience of Grinnell Company, Providence, R. I. The quotation is called to our attention by H. A. Keene, Marketing Staff, Distribution Division, of the Grinnell Company, and reads as follows:

"The first step undertaken in the direction of marketing research was location of the Company's market. After some time and study, three indices were selected for use as a guide to the measurement of size of potential market for the Company's products. These indices were obtained from the following sources:

"1. DOMESTIC ENGINEERING of Chicago publishes a book annually which deals with the heating and plumbing industries and which gives an index of each state's buying power for heating and plumbing goods.

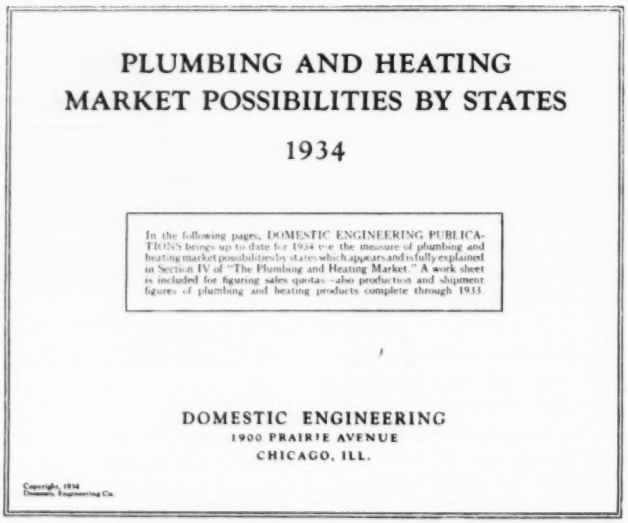
"2. *Sales Management* magazine published an index in 1928 giving potential buying power by counties.

"3. The Government's *Market Data Handbook*, published in 1929, gives a number of kinds of information by counties. From this handbook, data were obtained for compilation of a buying power index. The index included white population, numbers of manufacturing plants and value added by manufacture.

"Comparison of the indices obtained from the foregoing three sources showed that they were closely comparable and suitable for the purpose at hand.

"The next step was to group these county figures to correspond with the various sales departments of the company, thus to secure a basis for measuring the effectiveness of each department. For example, it was found that New England should furnish 9 per cent of the sales volume and that the territory covered by our eastern departments—New England, New York, New Jersey, Maryland and eastern Pennsylvania—represented 42 per cent of the potential market of the United States.

"We stacked our own departmental sales volume against these potentials and wherever we found a department that was doing a particularly good job, we studied its methods in order to pass its successful ideas on to those other departments that were less fortunate."


PLUMBING AND HEATING
MARKET POSSIBILITIES BY STATES
1934

In the following pages, DOMESTIC ENGINEERING PUBLICATIONS brings up-to-date for 1934 over the measure of plumbing and heating market possibilities by states which appears and is fully explained in Section IV of "The Plumbing and Heating Market." A work sheet is included for figuring sales quotas—also production and shipment figures of plumbing and heating products complete through 1933.

DOMESTIC ENGINEERING
1900 PRAIRIE AVENUE
CHICAGO, ILL.

Copyright, 1934
Domestic Engineering Co.

**Fig. 2—The front cover of the tabulated information published by DOMESTIC ENGINEERING on plumbing and heating market possibilities throughout the country**

Manufacturers interested in using the Sales Quota Sheet in planning their sales efforts may have a copy of the 1934 issue by writing to DOMESTIC ENGINEERING.

An instance of the planned sales co-operation possible between manufacturers and plumbing dealers is the plan launched by Henry Weis Mfg. Co., Inc., of Elkhart, Ind. The nub of this plan is the reimbursement of the plumbing dealer who undertakes to advertise the company's line of shower cabinets to an amount not exceeding 10 per cent of the total net price to be paid by the plumber under standard list price and discount sheets.

### CO-OPERATIVE PLANNING

The Weis company furnishes a selection of sixteen advertisements, in mat form, to be used as they stand with the name of the plumbing dealer, his address and telephone number added. The company "agrees that a receipted bill for advertising space, from any daily or weekly newspaper of general circulation published in the United States, when such bill is accompanied by marked copies of the issues or pages containing such advertising, will be accepted in lieu of an equal amount of cash when tendered as part payment for any merchandise listed in the shower cabinet division price list . . ." with the 10 per cent restriction as noted above.

Further provisions of the plan are that advertising insertions must be in issues between March 15 and September 15, 1934. Purchases must be made and delivery accepted between March 15 and October 1, 1934. Credit may not be applied against old accounts or against orders for shipments later than October 1, 1934. All claims must be made on or before November 1, 1934.

Thus the company offers the dealer an opportunity to earn back, out of sales, a part of the expenditure for advertising. The first contractor to notify the company of his intention to operate under the plan was John M. Forhecz of Garfield, N. J. One of the advertisements selected by Mr. Forhecz is reproduced in these pages.

The plan also provides that credits may be cleared through a wholesaler of plumbing and heating equipment and it is interesting to note that among those who have ordered the advertising mats are two wholesale organizations—their decision having been wholly voluntary. They will use the mats themselves, adding a line directing readers to their own master plumbers.

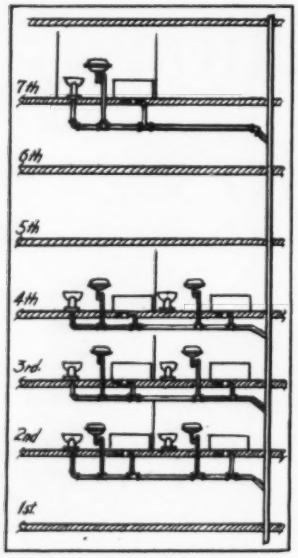
# Stop Cross Connections with Police Help

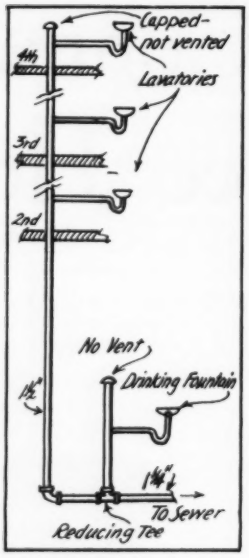
*At the recent convention of the Michigan State Association of Plumbing and Heating Dealers, it was told how a condition involving cross connections was found in a certain hotel. The owner was told of the dangers to his guests and was instructed to change his plumbing. The orders were ignored until the owner found a policeman keeping his doors closed until corrections were made*

THERE has been built up in the public mind, as a result of recent developments, a consciousness of the fact that there is a very definite relation between plumbing and public health. Home owners occupying their own premises have been impressed with the importance of good plumbing as a protection for their own well being. In addition, owners and operators of commercial establishments have been made to recognize their responsibilities for protecting public health through the sanitary installation of plumbing facilities.

Still further recognition has come through statements from representatives of the medical profession ascribing the recent outbreak of a water borne epidemic to the installation of faulty plumbing which made possible the polution of pure water supplies.

Resulting from this reawakened and new public consciousness of the part plumbing plays in our health and well being, there has been a very considerable amount of activity directed at the correction of insanitary installations. Plumbing contractors following this development have been active both in discharging their responsibility in seeking out and calling attention to dangerous conditions and in building up their business through the elimination of cross connections. One who has made a study of this question for DOMESTIC ENGINEERING has interviewed a large number of contractors engaged in the elimination of cross connections and has prepared a group of eight diagrams indicating a few of the ways in which cross connections occur. These examples are taken from actual installations which have been encountered. They are the types of cross connections which contractors active in this work are finding and which they are correcting. For instance, Fig. 1 illustrates, diagrammatically, an unvented plumbing installation in a seven-story building. The original installation was made for a five-story building after which two floors were added, with the consequent addition, of plumbing fixtures, to the original system. However, the original installation was not modified in any way and in addition to being unvented, it was inadequate for the increased load. The plumbing contractor, upon investigation, found that under certain heavy loads, sewage would fill the stack even as high as the second



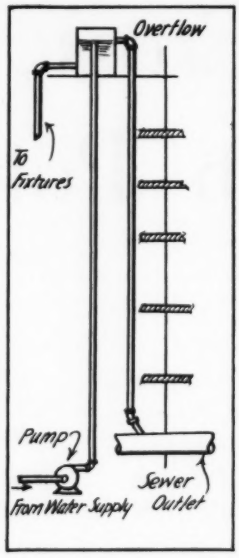




**Fig. 1—The diagram at extreme left indicates an unvented condition found which caused both siphoning and blowing of traps**

**Fig. 2—The middle diagram at left shows how a capped and unvented waste caused drinking fountain trap to become unsealed**

**Fig. 3—At the immediate left, an open connection between the sewer and the pure water supply is illustrated**

floor level and, as a result, it would back into the lower fixtures. The diagram marked Fig. 2 shows another faulty installation which was found. Here the system was without venting. In addition, the Tee serving the drinking fountain connection reduced the 1½-in. lavatory drain to 1¼-in. In operation, the discharge from the lavatories caused the waste water both to enter the fountain and to syphon the fountain trap. This installation was found in a three-story hotel and the drinking fountain happened to be located in a restaurant at the first floor level.

The condition illustrated in Fig. 3 shows a direct connection between the pure water storage supply and the sewer as a result of an untrapped, unvented and directly connected overflow line.

A very serious type of cross connection which is not uncommon is shown in Fig. 4. Here, the city water supply is definitely connected to a polluted river water supply, the idea being that under no conditions the valve separating the two would be closed. With this the case,

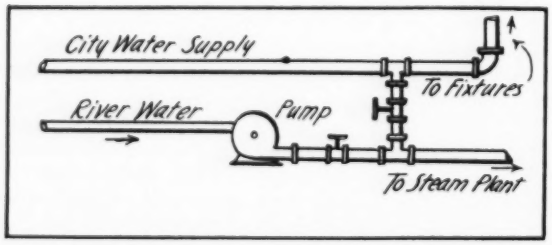



**Fig. 4—Here the city water supply is cross connected to polluted river water. A valve not completely closed permits the mixing of the supplies**

the city water supply would go to the pure water fixtures and the river water supply would be forced by the pump to serve condensers or similar equipment. The idea behind this cross connection is that in the event of a pump failure or a power failure, the valve ahead of the pump could be closed and city water could be run through the steam plant equipment. The danger lies in the possibility of the operator not closing the cross connecting valve when the pump is again placed in service. There is no possible way for the operator to know definitely if the valve is seated perfectly. A worn seat preventing complete closure, or foreign matter lodged under the seat permits the river water to be pumped into the city water supply.

The set up of fixtures illustrated in Fig. 5 represents

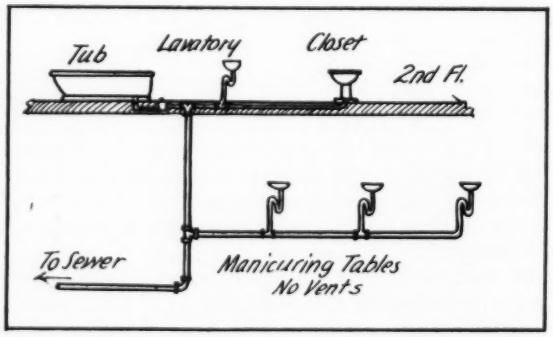



**Fig. 5—Here is another set of connections found which permits the unsealing of traps**

another instance of no venting. Here, the traps serving the lavatories at the manicuring tables are siphoned. At other times, waste from the second floor fixtures fills the first floor line and has been found to go so far as to enter the first floor lavatories.

The conditions shown in Fig. 6 represent another type of cross connections which has been encountered. Here, the pumps serve as boosters and under normal conditions the valves connecting the water supply line with the sewer are closed. The pumps are installed to force the water up to the roof tank. The condensers require cooling water which, in this case, is obtained from the

city water supply. When there is a moderate demand on the condensers, the cooling water is pumped back through the roof tank for distribution to the pure water supply outlets. However, when there is a full demand on the condensers, a surplus amount of water results so that it must be wasted to the sewer. Here, the danger occurs in going back to the pump system after the heavy

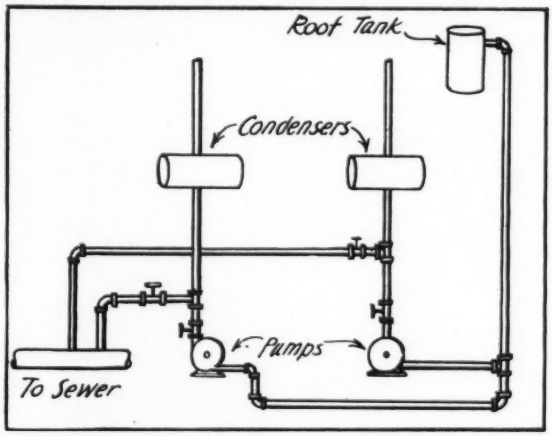



**Fig. 6—Here the pumps operate to draw sewer water into the supply lines provided the valves are not closed tightly**

demand has been removed from the condensers. If the valves in the connections between the condensers and the sewer are not closed tightly, the pull of the pumps causes sewer water to be drawn into the water supply line and to be forced up into the roof tank. The steam table shown in Fig. 7 presents its cross connection problem. Here the hot water supply is under the water level in the steam table. A heavy draw on the hot water supply, sufficient to cause a negative pressure in the line, per-

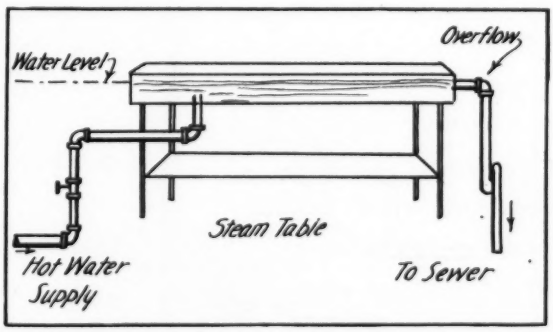



**Fig. 7—Here are both an underrim supply connection and a direct connection to a sewer**

mits water from the steam table to flow back into the supply. In addition, there is a direct connection between the overflow and the sewer so that in the event the overflow trap is unsealed, a direct passage for sewer air to the food serving table is provided. Customary practice is to discharge all equipment connected with the serving or storage of food, into an open fixture with the dis-

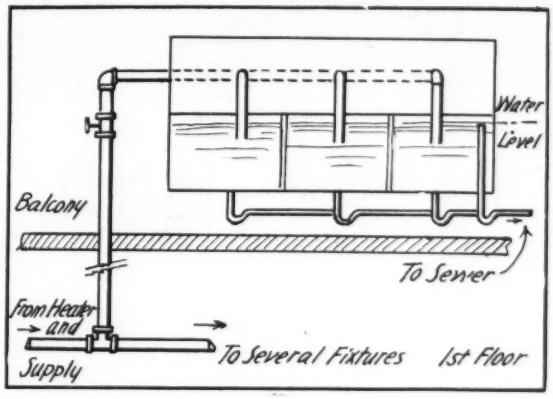



**Fig. 8—In this restaurant dishwasher, the inlet is submerged with the result that a partial vacuum in the supply will permit dishwater to be siphoned into it**

charge outlet placed at an elevation above the rim of the fixture.

The general conditions outlined in the case of the steam table also apply to the dishwasher shown in Fig. 8. This diagram illustrates a condition found in a restaurant where the dishwasher is located on a balcony. This restaurant serves from five to six hundred persons a day. The hot water inlets of the dishwasher were submerged 6 or 8 inches below the water level. All food was prepared on the floor below. Water for cooking or any hot water drawn from the down stairs fixtures immediately caused water to be drained out of the dishwasher through the supply line. This condition was discovered by a plumbing contractor who was called in to find a supposed leak in the dishwasher waste line. A leak was suspected by the restaurant operators because the water in the dishwasher dropped so frequently during the day. The loss of water, of course, occurred each time the fixture siphoned.

On April 17, 1934, regulations were adopted by the Chicago Board of Health regarding water supplies in establishments having dual water supply systems. These regulations are reprinted here in part as follows and will serve as a form for others to follow in promoting the control of this very important matter.

1. These regulations shall apply to every building, lot, or premises in the city of Chicago, in or upon which there exists any source of water supply other than the public water supply of the city of Chicago.

2. Cross-connections of any kind between the public water supply of the city of Chicago and any other water supply are prohibited.

3. Wherever it is desired to use the public water supply of the city as an auxiliary source in a system conveying any other supply of water, the city water supply shall be kept separate and distinct from any other source of supply, and shall be provided only through such equipment as is approved in writing by the Chicago Board of Health. Plans, showing such equipment for supplying the city water, shall be submitted to the Board of Health for approval and its approval secured before making any new installations for this purpose. Plans, showing existing installations, shall also be submitted at once to the Board of Health for approval.

# QUESTIONS AND ANSWERS!

## 1—

TO THE EDITOR:

Enclosed is a rough sketch (Fig. 1) of an open tank hot water job which has the following complaints:

(a) Requires three hours to heat.

(b) Uses excessive amount of fuel.

(c) Before circulation starts, both the main and expansion tank rumble and shake.

While I did not install this job I have been called in to remedy the trouble and if it were not for the expense I would tear out all of the piping and install it correctly. Various items such as a buried return main two feet underground, concrete floors, etc., make it advisable to make the changes in the piping as small as possible. You will note that the return line is 3 ft. 1 in. below the

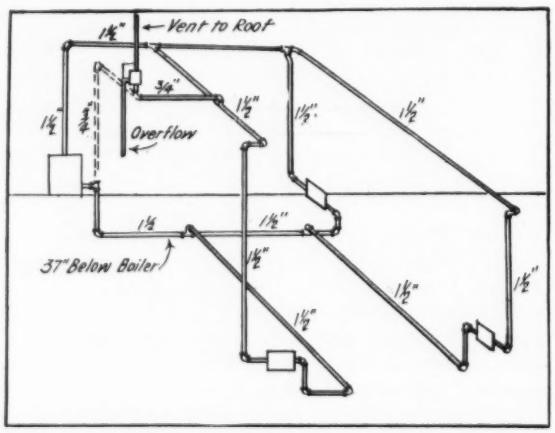



Fig. 1

boiler bottom: is there any way to remedy this trouble without the use of a circulator?

First I disconnected the tank and ran up a ¾-in. line from the return as shown by dotted lines and when I fired up, the boiler water went up to 240 deg. Fahr. without circulation and the system threw water out through the overflow. Then I lowered the overflow on the tank and hooked up the tank to both the main and return, as shown, after which I got heat in 1 hr. 40 min. without noise and the water did not have to go over 212 deg. Fahr. Is this change safe?

Texas — C. E. B.

TO THE READER:

Our reader's difficulty when he uncoupled the expansion tank from the main and re-connected it to the re-

1. *Three complaints are listed against this heating system which is of the open hot water type. Reader should give more complete information for a more definite answer to his problem.*

2. *A and B are at a variance in opinion as to the possibility of explosion occurring in a water heating storage tank. The temperature of the water when the tank lets go determines whether or not there is a violent rupture.*

3. *Is kerosene recommended as a boiler cleaning substance? We wonder if we understand this question correctly.*

4. *Reader wants to know number of feet of pipe coil necessary for preventing freezing in overhead fire storage tank.*

turn as he has shown in dotted lines was caused by his removing the air vent for the high portion of the system at the same time. When he reconnected the expansion pipe to both the return and the main, the vent was restored. There is nothing indicated on the sketch to show why the results obtained with the vent restored should be any better than those secured originally and we doubt if they really are. Of course the pipe sizes are out of line as it readily will be seen that, if all the radiators can be supplied by one 1½-in. main from the boiler, all of the drops do not require to be 1½-in., too. This results

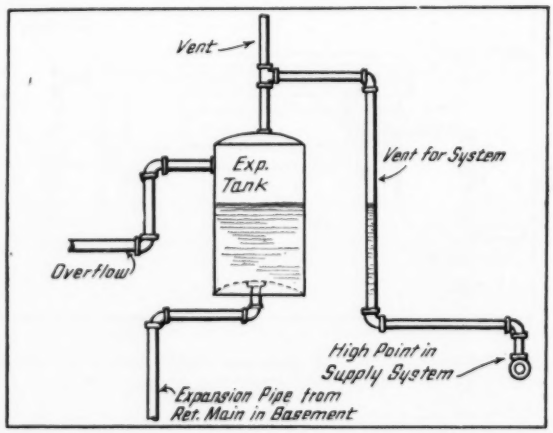



Fig. 2

in a somewhat larger quantity of water being retained in the system which would act to increase the time required to heat up.

Our reader has not given us any information at all as to the boiler size or the amount of radiation in the

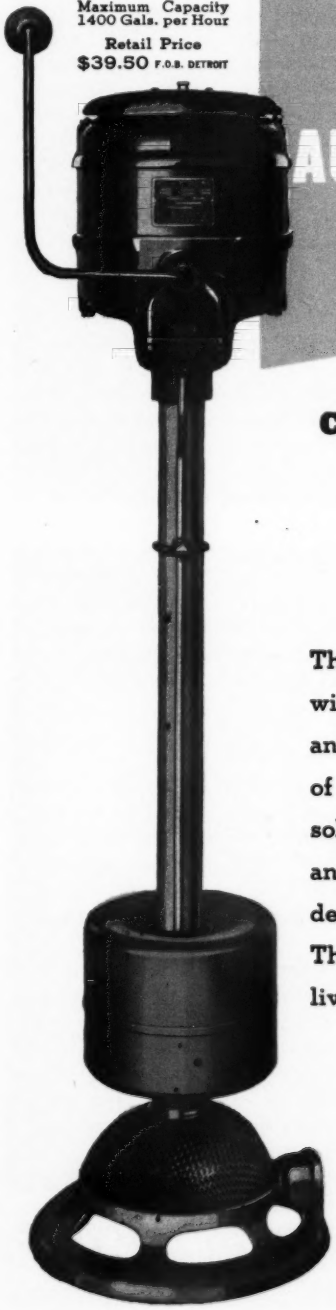
# THE CORRECT SOLUTION TO THE SEEPAGE WATER PROBLEM

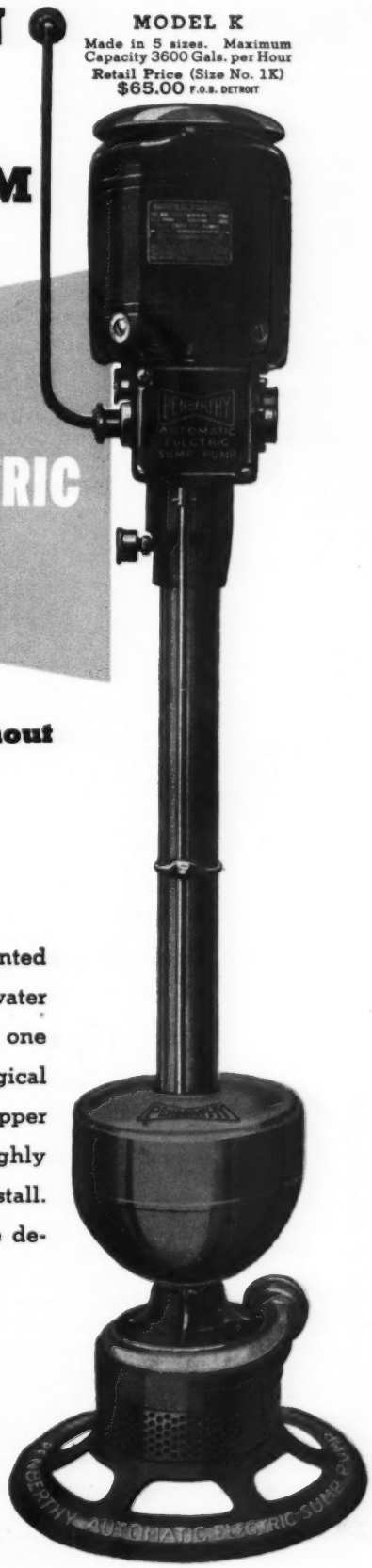
**MODEL 33**
Made in 1 size only
Maximum Capacity 1400 Gals. per Hour
Retail Price
$39.50 F.O.B. DETROIT

**MODEL K**
Made in 5 sizes. Maximum Capacity 3600 Gals. per Hour
Retail Price (Size No. 1K)
$65.00 F.O.B. DETROIT

PENBERTHY PRODUCTS

## AUTOMATIC ELECTRIC SUMP PUMPS






**Copper and Bronze Throughout**

The plumbing contractor who is confronted with the problem of removing seepage water and keeping a basement dry, will find one of these Penberthy Pumps to be the logical solution. Ruggedly constructed of copper and bronze throughout, they are thoroughly dependable, compact and easy to install. They are carried in stock for immediate delivery by jobbers everywhere.

**PENBERTHY INJECTOR COMPANY**

Manufacturers of Quality Products Since 1886

DETROIT MICHIGAN

WINDSOR ONTARIO

radiators so it is impossible to determine what the pipe sizing has to do with the trouble; the correct connecting up of the expansion tank for this installation is shown in Fig. 2 and by this method the hot water in the top of the system will not boil the tank. The return being 3 ft. 1 in. below the bottom of the boiler would not in itself cause any trouble and there is nothing unsafe in the scheme used by the correspondent or in the improved connections shown in Fig. 2.

## 2—

To the Editor:

A and B are at variance in opinion. A claims that it is impossible to have an explosion with a domestic hot water storage tank unless system is closed (having either check valve or pressure reducing valve) on street side of storage tank.

B claims, so far as explosion is concerned that there is no difference between a closed system with pressure relief valve operating at 125 lb., and open system where main pressure is 125 lb., if steam is generated and both tanks due to age, or condition suddenly open up. What is your opinion?

If B is right, why should not the plumber be vitally concerned in seeing that his customers have proper protection.

New Jersey. G. A. G.

To the Reader:

In considering this subject, there are several angles to keep in mind. In the first place, as you know when water is at atmospheric pressure, or at 14.696 lb. per sq. in. absolute pressure, or zero lb. per sq. in. gauge pressure, it boils at 212 deg. Fahr. When water is at, say, approximately 10 lb. per sq. in gauge pressure, or 24.97 lb. per sq. in. absolute pressure, the boiling point is 240 deg. Fahr. Again, when water is at 125 lb. per sq. in. gauge pressure, or 139.696 lb. per sq. in. absolute pressure, it does not form steam until it reaches a temperature of approximately 353 deg. Fahr.

Suppose the city water pressure in a range boiler is 125 lb. per sq. in. gauge, and suppose the heater has been operating long enough so that the temperature is, say, 240 deg. Fahr. By reference to a steam table, we see that at this temperature, 240 deg. Fahr, water will not form steam unless the pressure in the boiler is dropped to approximately 10 lb. per sq. in. gauge, or 24.97 lb. per sq. in. absolute pressure. Accordingly, there will be no steam in the range boiler at 240 deg. Fahr. when the pressure in the boiler is 125 lb. per sq. in. gauge. However, assume that the boiler ruptures for one reason or another, at 125 lb. per sq. in. pressure with a water temperature of 240 deg. Fahr. With the boiler ruptured, the pressure of the boiler immediately drops to that of atmospheric pressure, (zero lb. sq. in. gauge, or 14.696 lb. per sq. in. absolute). This atmospheric pressure is 10 lb. per sq. in. below the pressure at which steam forms when the water is at 240 deg. Fahr. The result is that upon this reduction of pressure to atmospheric pressure, the water in the boiler immediately bursts into steam and this is accompanied with such violent force that usually tremendous damage is done.

If there is 125 lb. gauge pressure in a water heating system, due either to its being a closed system with a pressure relief valve, or to its being an open system where the main pressure is 125 lb. per sq. in. and if the temperature of the water is raised to the point at which steam is formed at this pressure, namely 353 deg. Fahr., a sudden rupture in the tank will cause a violent explosion regardless of the system under consideration. In other words, the system will have no influence on the intensity of the explosion provided it permits a pressure of 125 lb. per sq. in. and a correspondingly high temperature above that at which water flashes into steam when at atmospheric pressure.

In order to safeguard against these conditions, it is customary to install temperature relief valves so as to prevent the water from reaching a dangerously high temperature.

One difference between a closed system at 125 lb. per sq. in. pressure and an open system where the main pressure is 125 lb. per sq. in. is that in the closed system the pressure usually is increased when the water is heated due to the expansion of the water. In an open system, water expands back into the supply main and the pressure is maintained at 125 lb. per sq. in. Where the water storage tank is in a weakened condition due either to corrosion or some other cause, the increase in pressure, as a result of the expansion of water in the closed system, may be just sufficient to bring about the failure of the tank before the pressure relief valve is brought into operation.

This is a subject in which all plumbers should be vitally concerned. As a result of their knowledge of the potential dangers, it is their responsibility to promote safeguards against the explosion of range boilers. Aside from this public protection angle there are the possibilities of plumbing contractors building up their business through the selling and installing of adequate protective devices for water heating systems.

## 3—

To the Editor:

Please let me know if your engineering department recommends the use of kerosene as a compound for cleaning steam boilers. If so, in what quantity?

New York. S. F. L.

To the Reader:

We are afraid that you are referring to some matter which is not apparent to us in your letter. In the writer's experience, using kerosene to clean the inside of a steam boiler is unheard of. Under no circumstances should any kind of oil be poured into a boiler. Even a few drops will cause the boiler to have an unsteady water line.

Oil, as you know, is lighter than water and it will float to the surface of the water. In addition, it has what is known as a greater surface tension than water.

No doubt you have noticed that when water boils, the action consists of bubbles rising from the bottom of the pan and breaking through the surface of the water. When the water is clean they break through easily and boiling is rapid. In other words, steam is given off quickly and easily. However, when the water is dirty or when there is oil on the surface so that the bubbles cannot break through so easily, then steaming does not take place as rapidly. The result is that it requires a hotter fire to cause steaming.

# America's cities—SLOAN equipped

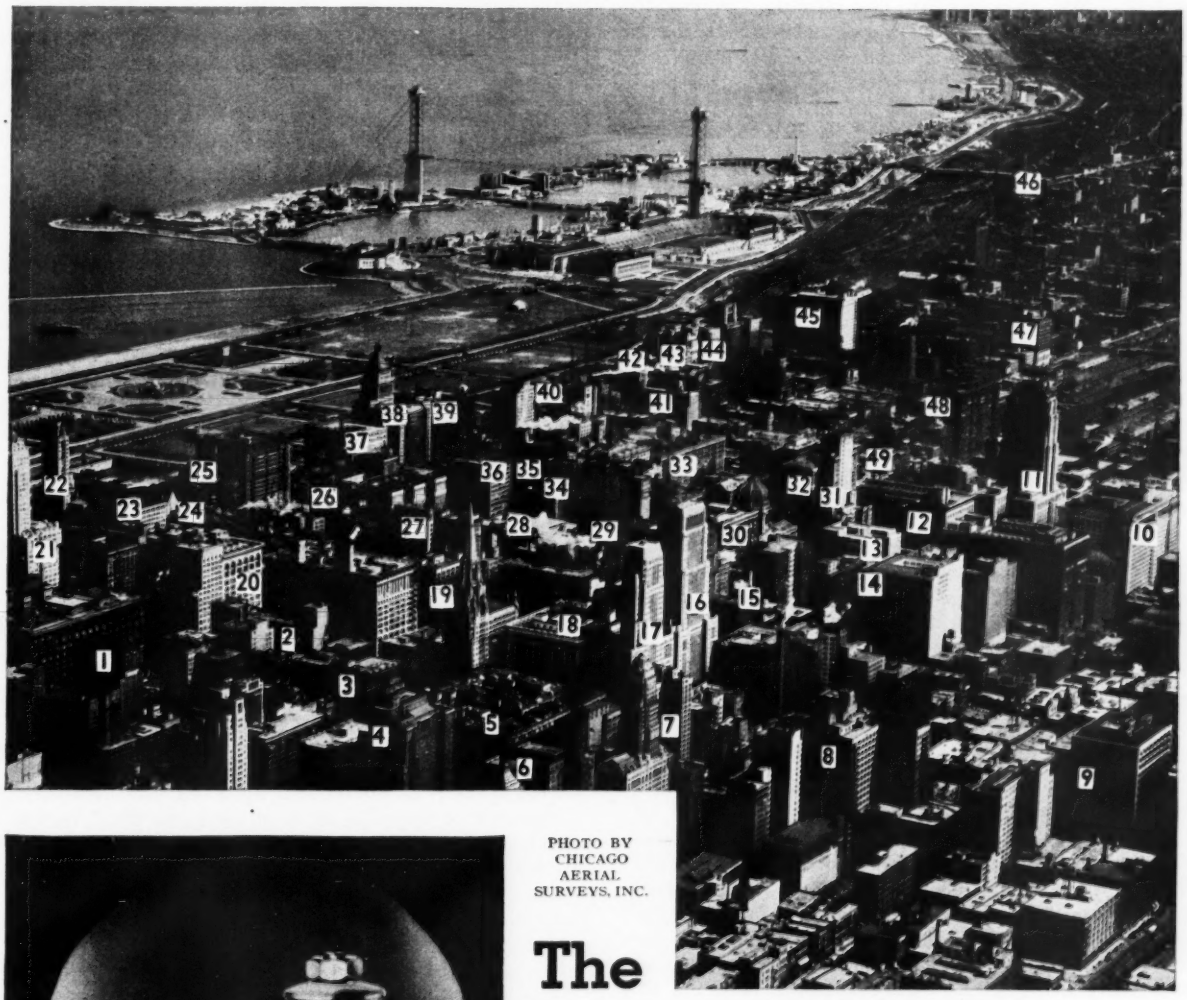
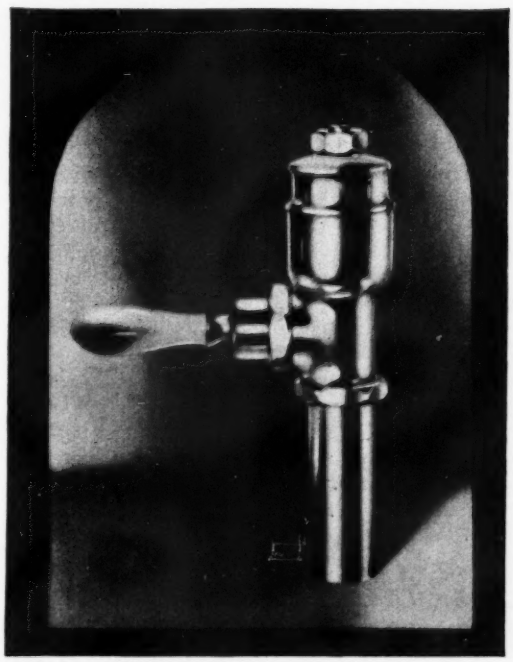



PHOTO BY CHICAGO AERIAL SURVEYS, INC.



## The Loop—CHICAGO

**Prominent SLOAN Flush Valve Installations**

1. Masonic Temple and Oriental Theater
2. Woolworth Building
3. City Hall Square Building
4. Sherman Hotel
5. City Hall and County Building
6. Burnham Building
7. 100 N. LaSalle Street Building
8. Illinois Bell Telephone Co.
9. Illinois Bell Telephone Co.
10. Insurance Exchange Building
11. Board of Trade Building
12. Continental Illinois Bank
13. New Field Building
14. State Bank Building
15. Roanoke Building
16. No. 1 LaSalle Street Building
17. American National Bank Building
18. Conway Building
19. Union Trust & Savings Bank
20. Mandel Brothers Store
21. Pittsfield Building
22. Willoughby Tower
23. Mallers Building
24. Kesner Building
25. Illinois Athletic Club
26. Palmer House Hotel
27. North American Building
28. The Fair Department Store
29. First National Bank (In Morrison Hotel)
30. Commonwealth Edison Building
31. Bankers Building
32. Union League Club
33. Sears-Roebuck Store
34. The Republic Building
35. The Hub Building
36. Consumers Building
37. Railway Exchange Building
38. Straus Building
39. McCormick Building
40. Congress Hotel
41. Harrison Hotel
42. Bloom Building
43. Blackstone Hotel
44. Stevens Hotel
45. Standard Oil Co. Building
46. R. R. Donnelley Plant
47. Central Police Headquarters
48. Transportation Building
49. Atlantic Hotel

## SLOAN VALVE CO » CHICAGO

You have the same condition inside of a steam boiler. If you have thought of cleaning out your boiler, our suggestion is that you purchase a boiler cleaning compound manufactured especially for this purpose. Follow the directions of the manufacturer and make sure that when you have cleaned the boiler, all of the compound and scum which are loosened up from the walls of the boiler are flushed out in the washing process. After this, run clean water into the boiler and the job is ready for operation.

If we have misunderstood your question, we shall be glad to hear from you again.

*4—*

To the Editor:

Can you advise us at once as to the number of square feet in the form of a pipe coil which will be required to keep a 50,000 gal. overhead fire storage tank from freezing when the outside temperature goes to 10 F below zero? The coil is to be placed in the storage tank and will be surrounded entirely by water and the tank itself will be located on the top of a building.

Indiana. B. R. E.

To the Reader:

The amount of heat lost from an overhead storage tank filled with water depends not only on the outside temperature but also on the wind and the material from which the tank is constructed. A wooden tank will lose considerable less heat than a steel tank but this reply will be based on the steel form of tank which is becoming very common with the assurance that the coil computed would be more than ample for a wooden tank.

No size being given by the reader for this tank it will be assumed that it contains about 7,000 cu. ft., since

7,000 × 7½ gal. gives 52,500 gal.

and this allows a little for space above the water. A tank 9 ft. in diameter and about 11 ft. high would have approximately this amount of cubage, or 7,000 cu. ft., and this will be the size computed for as an example.

The heat radiated from a steel surface with water on one side and still air on the other is about 2.4 Btu. per sq. ft. per degree of temperature difference and with the wind blowing it will be assumed that this rate may be doubled. The temperature difference, if the water is held at 40 deg. Fahr., when the outside is —10 deg. Fahr., will be 50 deg. Fahr. So the loss from each square foot of the tank surface will be

2.4 × 2 × 50 deg. Fahr. or 240 Btu.

The outside area of the tank will consist of the area of the shell plus the area of the top and the area of the bottom. The area of a 9 ft. circle is approximately 63 sq. ft., and doubling this for the top and the bottom gives

63 × 2 or 126 sq. ft.

The area of the shell is the circumference of the tank times the height or

9 ft. × 3.14 × 11 ft., or about 312 sq. ft.

Therefore the total area of the tank is

| | |
|---|---|
| Top and Bottom | 126 sq. ft. |
| Side | 312 sq. ft. |
| Total | 438 sq. ft. |

At an efficiency of 240 Btu. per sq. ft., the heat loss will amount to

438 sq. ft. × 240 Btu. or 105,000 Btu. per hr.

and the efficiency of a pipe coil when placed in water at 40 deg. Fahr. and supplied with steam at 2 lb. pressure is the efficiency of a coil with a temperature difference of

219 — 40 or 179 degrees, say 180 degrees

which is approximately 45,000 Btu. per sq. ft., so the number of sq. ft. of coil surface required will be around

105,000 Btu./45,000 Btu. or 2.3 sq. ft.

The load on this coil however is equivalent to 438 sq. ft. E.D.R.

A 1-in. pipe requires 2.9 lineal feet for 1 sq. ft. of external surface and the lineal feet of 1 in. pipe required will be

2.3 sq. ft. × 2.9 lin. ft., or almost 7 lin. ft.

If the tank is of such a shape as to involve more surface than has been considered in the above the coil must be increased proportionately.

---

# Questions For READERS

The following question was asked in the April issue, and the following answer is by a reader:

*Does a refrigerator cool the room in which it is placed or does it heat it, assuming that both the compressor and the box are together in the same room?*

In answering this question, the important point to keep in mind is that in any mechanical operation all of the energy added or subtracted must be accounted for. Electrical refrigeration first involves electrical energy which, through the motor is transferred into mechanical energy and heat energy. The heat from the motor is given off into the room, and, in this analysis is the first heat increase to be considered. The second source of heat to consider is that which results from the refrigeration cycle. Briefly, the refrigerant is compressed in the refrigerator compressor. When this occurs, the mechanical energy expended by the motor on the compressor is transformed into heat. Usually, expanded compressor surfaces and a fan serve to dissipate this heat into the room. When the refrigerant is compressed, it takes on heat because of the work performed on it. But this heat is removed after the compression by the compressor cooling facilities. The expansion of the gas in the refrigerating chamber takes heat out of the gas and, in turn, out of the refrigerating chamber, thus the cooling effect.

The only net amount of heat which is added to the room in question, is that which is taken out of the refrigerator and the objects contained in it and that which is generated through the electric motor by transforming electric energy into heat energy.

**How Would You Answer This Question?**

*Which is correct to say, that heated water rises or that cold water falls?*

Answers based upon your experience, suitable, will be paid for and published in the August issue.

DOMESTIC ENGINEERING

# Automatic Heat *and* Air Conditioning Section

SELL COMFORT and Equipment Sales Take Care of Themselves

JUNE, 1934

# the parade has started

## STILL TIME TO GET IN !

They've started already . . . thousands upon thousands who went through this last zero winter shoveling, worrying, freezing. They've seen their friends enjoying completely automatic Delco Heat . . . they've found out how little it costs . . . and now *they're going to buy.* This isn't a supposition—it's a fact, proved through recent exhaustive surveys throughout the country.

### *Wonderful Profit Opportunity*

Already Delco Heat dealers everywhere are cashing in on this tremendous demand for dependable, automatic oil heat. And here's why they're getting such a big share of this new business:—

Delco Heat is the General Motors value in automatic oil heat. Home owners know they can buy Delco Heat with complete confidence in their investment.

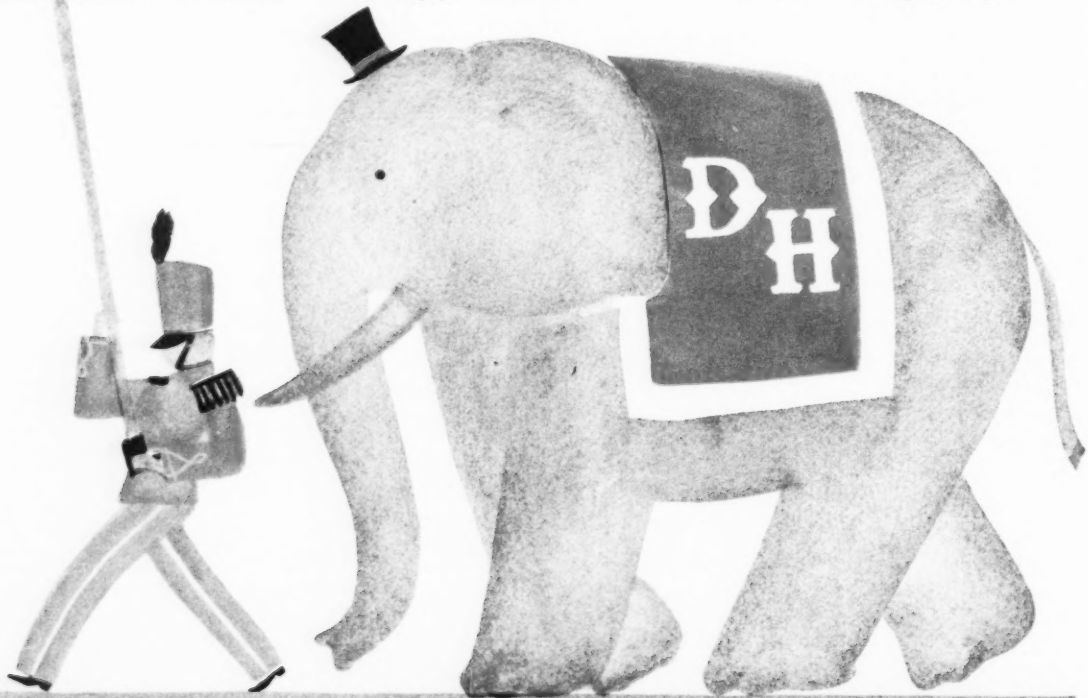
There's a complete line of outstanding products for every heating requirement—from the low-priced, fast-selling Delco Heat oil burner to the new, harmonized Delco Heat Boiler.

Delco Heat is building still further demand with increased advertising in magazines, newspapers, direct mail.

Delco Heat dealers are equipped with a sound sales plan developed and directed by outstanding specialty selling authorities.

### *Now Is The Time To Act*

You still have time to get in on this wonderful selling opportunity. Mail the coupon for our new Profit Opportunity booklet, which gives all the facts about Delco Heat. This free booklet tells how we help you get started with Delco Heat—how we help you make more sales and more money. Don't wait until it's too late to get started this season. Send the coupon today.




**DELCO • HEAT**

A GENERAL MOTORS VALUE

Delco Appliance Corporation, Subsidiary of General Motors, Dept. B-212, Rochester, N.Y.
I'm interested in the Delco Heat exclusive franchise. Please send new booklet, "A New Money-Making Opportunity."

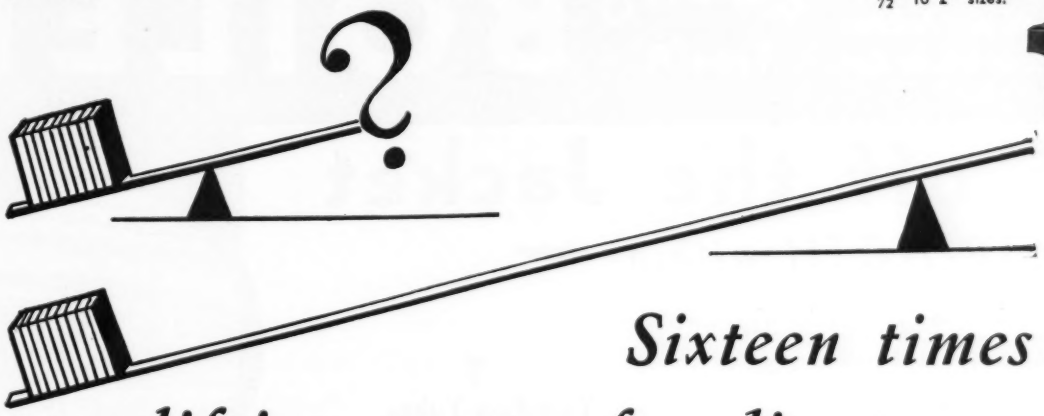
*Name* .....

*Address* .....

*City* ..... *State* .....

# A DIAPHRAGM type pressure relief valve with—

Pressure Relief Valve for Range Boilers ½" to 2" sizes.



## *Sixteen times the lifting power of a disc-type valve*

Any pressure-relief valve is only as sensitive—only as sure—as the ability of the disc to lift.

The eminent Greek scientist Archimedes said it would be possible to lift the earth if he had enough leverage. And we have applied this principle in a simple, sane fashion, with startling results in the line of sensitivity.

The diaphragm in this Watts Pressure Relief Valve consists of five plies of laminated monel metal and phosphor bronze, each ply of which will withstand a pressure of 150 lbs. (750 lbs. total). This diaphragm has sixteen times more effective area for opening than a corresponding pop relief valve. Therefore, it has sixteen times the lifting power — is sixteen times more sensitive. And it permits us to equip the valve with a phosphor-bronze spring sixteen times heavier and stronger than springs found in pop type valves.

### Special Features

The Watts ½" No. 30-C Valve was the pioneer calibrated valve on the market. Without taking this valve apart or disturbing it in any way—and without the use of a gauge—it can be set very simply within any pressure range from 75 to 125 lbs.

### All Bronze

Designed to be installed in hot or cold water line, on domestic range boilers, storage tanks, water pumps, and instruments or equipment requiring pressure relief.

A genuine Jenkins disc is attached to the diaphragm by a watertight cap and screw. The diaphragm and disc are on the ceiling of the valve, away from the flow of water. No danger of sediment settling on the valve seat.

No soldered parts—nothing loose to get out of place—no guide wings to stick or bind—absolutely drip-tight. Watts Valves meet A. S. M. E. specifications and are listed as standard by the underwriters' Laboratories.

Write for Booklet No. 30.

WATTS

# DIAPHRAGM RELIEF VALVES

JOHN G. KELLY, Inc., *Distributors*
210 East 45th St., New York, N. Y.

WATTS REGULATOR CO.
Lawrence, Mass.

# KEWANEE

For Heating Homes and Smaller Buildings With Coal, Oil or Gas

ROUND Type "R" BOILER

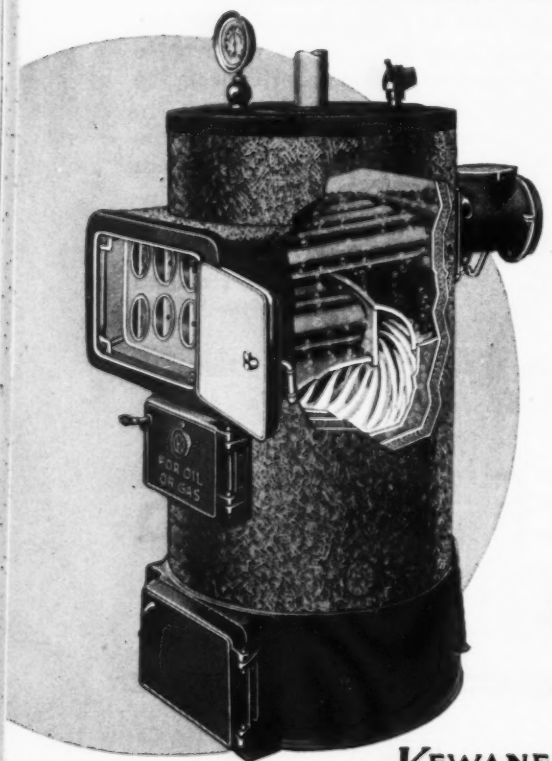
## Slip off the Jacket

*see STRENGTH within —*

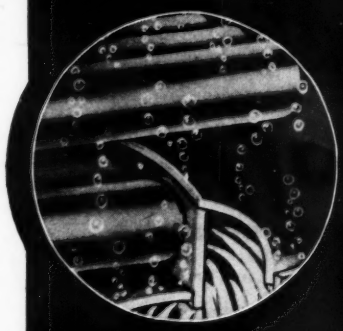
An attractive jacket makes any boiler *look* well . . . but it can't make it *perform* well.

Kewanee beauty is more than "skin deep" for under the jacket—in the boiler itself, are extra strong features that make Kewanee outstanding for

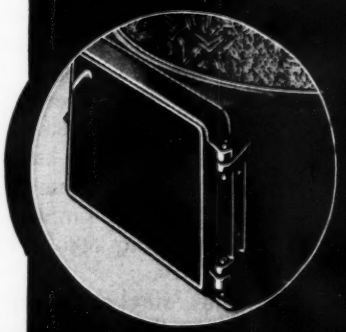
**LONGER LIFE**
**BETTER PERFORMANCE**
**LOWER FUEL BILLS**



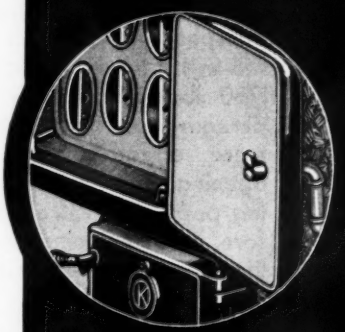

**1**
**Two-Pass Tubes**
Accessible Two-Pass Tubes HOLD those hot gases. Extra wall thickness makes them last longer.



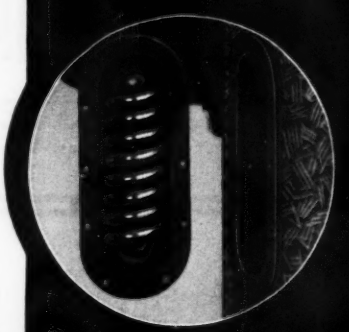
**2**
**Heavier Doors and Frames**
All castings are extra substantial. Doors have gas-tight ground joints so fumes and soot cannot escape into the house.



**3**
**Refractory Lining**
The fire and flue doors are insulated, preventing heat from radiating outside.



**4**
**"In-Built" Hot Water Coil**
Each Kewanee Round "R" has an "in-built" coil for heating domestic hot water—saves the cost of a separate heater.



*the Best Boiler Built — yet costs the least*

KEWANEE BOILER CORPORATION

*KEWANEE, ILLINOIS — (Branches in Sixty-One Principal Cities)*

"WE ORDER EVERYTHING FOR OXWELDING AND CUTTING FROM LINDE"

# CONFIDENCE . .
# in Oxwelded Piping and Linde Process Service

THE contract called for an oxy-acetylene welded piping installation and the contractor bid with confidence—knowing Linde Process Service would help.

Linde service operators helped the foreman to qualify his regular men, completing their grasp of the latest developments in pipe welding. They were instructed in making templets for special fittings, shown how to fabricate the boiler headers and how best to use welding in erecting the mains and risers.

When that job was finished the piping contractor had an organization skilled in welding, ready to tackle more and bigger oxwelded pipe installations. He appreciates that when he buys from Linde, the full benefits of the oxy-acetylene process are assured to him through Linde Process Service.

*Linde Process Service* can bring to your piping problems also the widespread experience Linde has acquired in over twenty years of pioneering and developing oxy-acetylene applications. It will interpret for you the latest methods developed in the laboratory and show you how to apply them profitably to your own actual welding and cutting operations. This service is supplied to Linde customers without obligation.

*Oxwelding can be used to join pipe of any metal, and for any type of piping service. Here a weld is being made in brass pipe.*

*In an installation of steel pipe, such as this, Lindewelding—the high speed, low cost method of joining pipe—can be used to advantage.*

THE LINDE AIR PRODUCTS COMPANY

*Unit of Union Carbide and Carbon Corporation*

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN CO., LTD. TORONTO

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES • UNION CARBIDE

PRODUCT OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

Users of products and processes developed by Units of Union Carbide and Carbon Corporation benefit from a most unique coordination of scientific research with manufacturing, sales and service facilities. You are cordially invited to visit this summer the numerous exhibits sponsored by the Corporation in both the Basic and Applied Science sections in the Hall of Science at Chicago's 1934 A Century of Progress Exposition.

*Sales Offices:*

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| Atlanta | Houston | Portland, Ore. |
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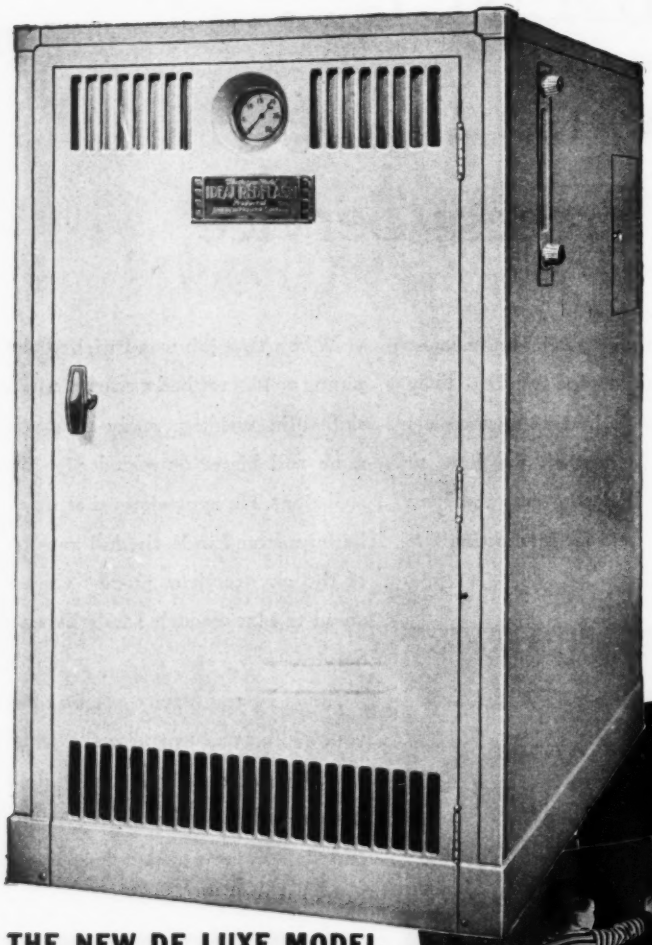
NRA

# NOW YOU CAN SELL STYLE AND BEAUTY AS WELL AS EFFICIENCY



WHAT sells automobiles today? Performance plus *new beauty*. Why does every home owner want a modern bathroom? For the *beauty* of colored fixtures. Now — *new style and beauty* will help you sell the De Luxe Model Ideal Redflash Boiler.

Opportunities for replacement are greatly increased because the De Luxe Redflash for solid fuel will make thousands of home owners realize that their present boilers are out of date. Its handsome exterior will stop people at your display window... bring them in to examine it. Then the name and reputation help to close the sale. Write today to your jobber for all the details.

## THE NEW DE LUXE MODEL IDEAL REDFLASH BOILER

●

THOROUGHLY INSULATED. The handsome jacket of the De Luxe Redflash not only adds to its beauty but to its efficiency as well. It insulates the boiler so well that children can play around it without danger of burns.

●

SEE THE INSIDE. Open the outer door of the De Luxe Redflash and show your customers the scientific design and sturdy construction that have made the Redflash line famous. Beauty outside, efficiency inside—that's the story!

AMERICAN RADIATOR COMPANY

40 West 40th Street, New York, N. Y. ·

*Division of* AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

# SEE WHAT YOU GET!

## *Advantages that save time—temper—trouble!*

**1. LEAKPROOF HEATING ELEMENT**
An outstanding Speed Heater feature. Extended surface copper fins are forced onto copper tubes. Header joints made absolutely leakproof by special Sturtevant method.

**2. PRESSURES UP TO 200 LBS.**
Every Speed Heater is guaranteed to withstand steam pressures up to 200 lbs. per sq. in. They are actually operating successfully on pressures as high as 380 lbs.! Work equally well on high and low pressures.

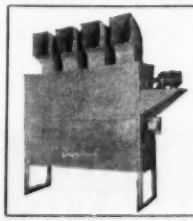
**3. PIPING ECONOMY**
Threaded connections for steam supply and return lines provided on both sides of heater. You simply connect to the side nearest the supply line. Saves pipe, time, labor.

**4. HANDY HANGERS SUPPLIED**
A big convenience. Contractors especially will appreciate it. Made of malleable iron, these hangers are quickly and easily formed in a vise to fit any condition.

**5. MULTI-SPEED MOTORS**
All Speed Heaters are equipped with multiple speed motors. Provides flexible control for extra fast heating and maintenance of normal set temperatures as desired.

**6. QUICK SHIPMENT**
You get fast, on-the-dot service when you order Speed Heaters. Most popular voltages stocked in many locations. Other standard voltages stocked at Hyde Park, Mass.

**SEND FOR COMPLETE DATA**



STURTEVANT REXVANE HEATER
For floor, wall or ceiling installation. Built in a wide variety of types and sizes, ranging from 100,000 to 1,000,000 B.T.U.

B. F. Sturtevant Company, Hyde Park, Boston, Mass.
☐ Send me Sturtevant Speed Heater Catalog No. 396.
☐ Have your nearby representative call.

*Name*.....
*Company*.....
*Address*.....

D.E. 6-34

# "During this very cold winter (1933-34 September to May) I have spent but $84.00 for oil"...

Home of Mr. Franklin T. Mathewson, White Plains, N. Y. Mr. Benson Eschenbach, Architect. Oil burner supplied by Westchester Service Corporation.

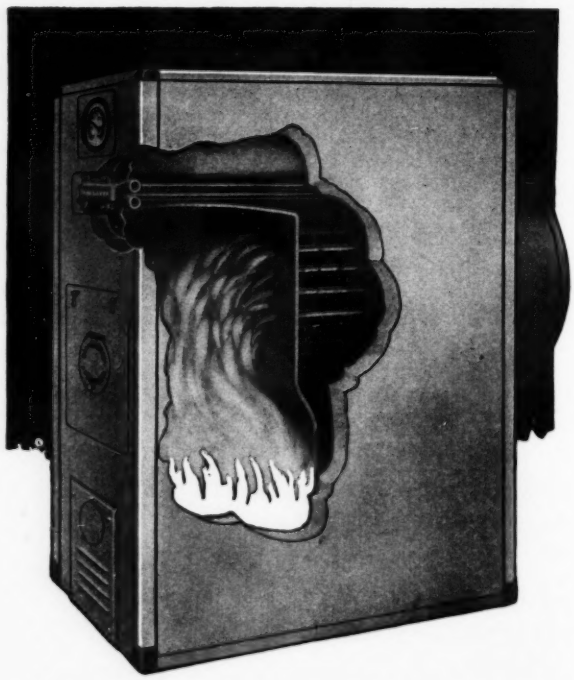
So writes the owner of this attractive home, expressing pride in his heating installation.

In this residence—seven rooms and two baths—a well-known rotary type of oil burner teams up with a FITZGIBBONS OIL-EIGHTY AUTOMATIC steel boiler to supply not only heating comfort but also domestic hot water. The result is eminently successful as well as highly economical. And the lively satisfaction on the part of the owner is certain to be translated into terms of business-building good will toward the organization behind the oil burner and toward the architect who counseled the selection of burner and boiler.

Moreover, this owner-satisfaction works twelve months in the year. The boiler supplies year-round

**INSTANT HOT WATER**
**without a storage tank**

through the FITZGIBBONS TANKSAVER, a built-in element which gives this most modern of boilers an added value—and is one more reason why it is the perfect team-mate for any good oil burner.



**WRITE FOR BULLETIN D**

and get full details of the boiler that insures a successful installation with any good oil burner.

NRA WE DO OUR PART

***Fitzgibbons Boiler Company, Inc.***

GENERAL OFFICES: 570 SEVENTH AVENUE, NEW YORK, N.Y.
Works: OSWEGO, N. Y.

BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

**FITZGIBBONS OIL-EIGHTY AUTOMATIC**

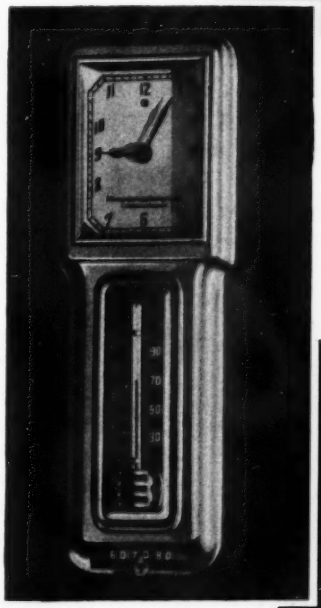
*Complete*

# CONTROL SYSTEMS

*for*

# AIR CONDITIONING

THERE is a Minneapolis-Honeywell Control System for every air conditioning application . . . Each individual control is designed to accomplish its particular function with characteristic Minneapolis-Honeywell accuracy and efficiency, and to operate in perfect harmony with the other controls comprising the system. For complete satisfaction, recommend and install Minneapolis-Honeywell controls throughout. Minneapolis-Honeywell Regulator Company, 2801 Fourth Ave. So., Minneapolis, Minn. Branch or distributing offices in all principal cities.



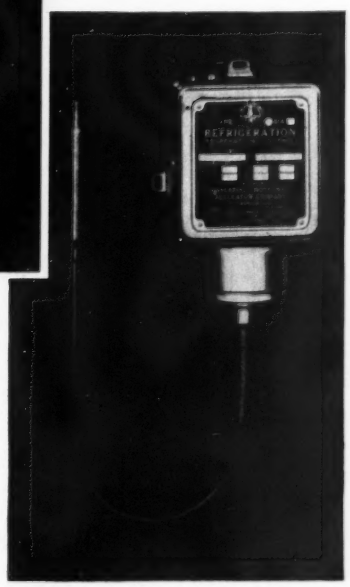
**Humidity Control**—(above) Very accurate with exceptionally small differential

•

**Chronotherm**—(left) Provides unvarying temperature and eliminates "Cold 70°"

•

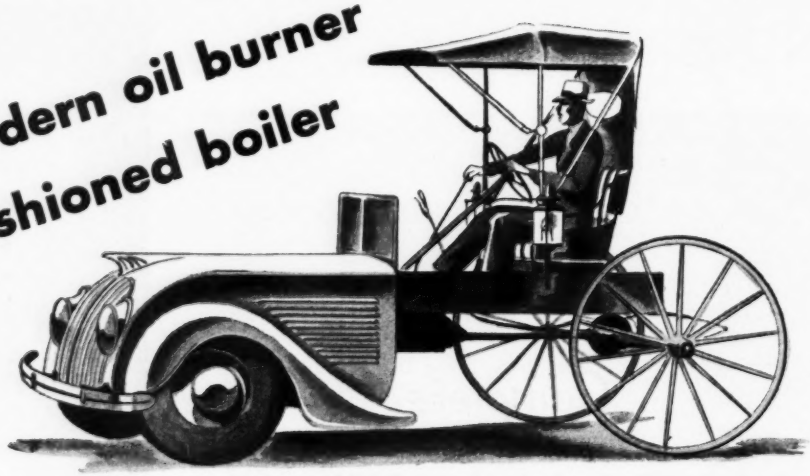
**Remote Bulb Temperature Controller**—(below) For controlling duct temperature



# MINNEAPOLIS HONEYWELL

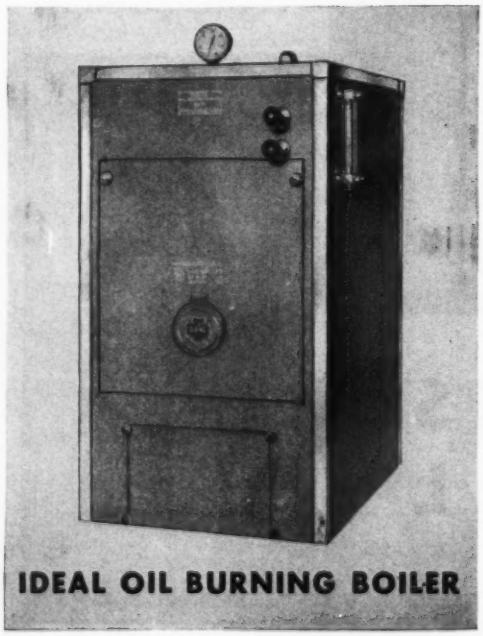
*Control Systems*

Putting a modern oil burner in an old fashioned boiler



# is like putting a modern motor in an old buggy...

BUGGY and boiler . . . both do a good job when they are used as they were designed to be. The old buggy was designed for a horse to supply the power. The usual boiler is all right with even heating, solid fuel. But today's highly perfected and automatic oil burners with their intermittent operation, demand a refinement in boiler design not contemplated in the usual coal burning boiler.



IDEAL OIL BURNING BOILER

For most economical operation, both burner and boiler must be adapted to work together. Just as the auto engine needs a modern body for comfort, economy and extra service, the oil burner needs a boiler designed especially for it. Too, there's a greater satisfaction—greater profit—in a beautifully finished, complete installation that will do all you claim for it.

The American Radiator Company present the new "Ideal" Oil Burning Boiler as the answer to this problem. It was designed in conjunction with the American Oil Burner Association. It is used by Arco Petro, Electrol, Ideal Fluid Heat, Timken Silent and Victory in their burner-boiler units. Its modern design, inside and out, brings any heating installation up to date —permits the best oil burner to live up to every promise of its efficiency.

AMERICAN RADIATOR COMPANY

40 W. 40th St., New York, N. Y.

*Division of*

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

# ANNOUNCING

This part will be returned to owner, if installation requirements have been approved by manufacturer.
To Secure Guarantee, Return This Entire Card to Manufacturer.

**TWENTY YEAR GUARANTEE**

On ..... G & C

G & C ..... Copper Tank, Serial No. .....

a period of 20 years, provided a certified installation is made in accordance with the form below, and such certification mailed to us within three months from date of installation.

The certified installation must be made by a Licensed Plumber, and conform to local and state laws.

Pressure, Temperature and Vacuum Relief Valves must be installed and maintained in proper working condition. The tank must be subjected to no greater working pressure than that set forth in the specifications accompanying the pressure than that set forth in the specifications under normal use same. In the event the tank proves defective tramping causes and conditions (without the intervention of extraordinary causes and conditions such as fire, freezing, any unavoidable casualties, of our signature below, we agree either to repair or replace the tank without charge or, at our election, to refund the owner as the proportion of the original purchase price for whole period, or, at our election, to credit the owner's account with a proportion as is indicated above of the price of the 20 years bears to the whole period, or, at our election, to by us, with the same proportion as is indicated above of the price of the new tank, f. o. b. our plant. We shall be furnished above of the under, unless we shall be notified promptly of any defect and unless the tank is sent transportation prepaid to our nearest and unless consequence of this guarantee, we shall have no liability for damages to persons or to property or for labor charges nor be obligated in any respect other than as specifically stated above.

To: .....

..... 193...

..... Street ..... (Owner)

..... City .....

Certified Installation of Copper Tank, Serial No. ..... State

has been sent to us by .....

Plumbing Contractor. .....

..... City ..... Street

Said certificate complies with requirements for twenty year guarantee which we hereby extend to said boiler, in accordance with conditions outlined above.

By .....

(To be filled in and signed by manufacturer, if requirements are met.)

This Must Be Filled Out By Plumbing Contractor Installing Boiler

**CERTIFIED INSTALLATION OF**

G & C ..... Copper Tank ..... Gal. Capacity ..... Lbs. Test

Serial No. ..... Mfd. By ..... GERSTEIN & COOPER CO.

Address ..... 1 & 3 WEST THIRD STREET

SOUTH BOSTON, MASSACHUSETTS, U. S. A.

Installed on ..... Date

I hereby certify that I have on the above date installed copper boiler,

Serial No. ..... at the following address:

Name .....

..... (Owner)

..... City ..... Street

..... State

Installation has been made conforming to all local and state ordinances or laws. The following valves have been connected to this boiler:

(Makes)

..... Pressure Relief Valve—Set to operate at ..... lbs.

(Must be no greater than working pressure stamped on boiler)

..... Temperature Relief Valve—Set to operate at ..... F.

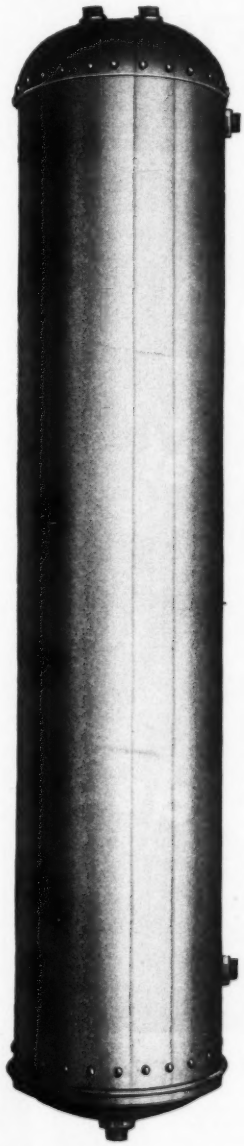
..... Vacuum Valve

If the above complies with your requirements, please mail to "owner" of boiler, twenty-year guarantee certificate at once.

Yours truly,

My registration or license number is .....

.....



The improved All Copper G&C Boiler Riveted Top and Bottom and Reinforced to insure against collapse.

## 20 YEAR GUARANTEE

ON THE

## GERSTEIN & COOPER

## IMPROVED • RUST PROOF • BOILER

### Pure Unalloyed Copper

On new jobs as well as replacements it will pay you to install the Improved Gerstein & Cooper All-Copper Range Boiler — backed by the Gerstein & Cooper 20 Year Guarantee.

Consider carefully this Guaranteed G & C boiler as a most profitable product for you to sell, one on which you can stake your reputation, even as we stake ours, as to its superior quality and extreme durability.

Specify the G & C Improved, 20 Year Guaranteed boiler to your jobber. Write for more complete details on this outstanding all-copper boiler direct to

## GERSTEIN & COOPER CO.

South Boston Massachusetts

Offices in New York and Baltimore

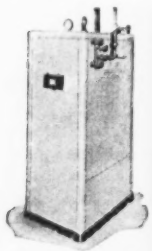
Representatives: Troop Water Heater Co., Pittsburgh Edward Sinn, Harrison, N. J. Strong, Carlisle & Hammond Co., Cleveland, Ohio

## The S-N Line is Complete

**S-N Warm Air Oil or Gas Furnace**

A highly efficient warm air furnace especially designed for oil or gas fuels. Ideal for use with the new S-N "Junior" Oil Burner.

Furnace has in-built humidifier, air filter, and air-blower. It circulates heat on the contra-flow principle. The furnace is also arranged so that air-cooling equipment may be added when desired.



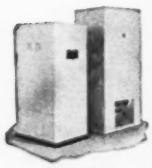
**S-N Oil or Gas Furnace**

(Steam or Hot Water)

An efficient furnace for either oil or gas fuel. 91% efficiency.

**S-N "Pioneer" Pressure Type Burners**

Engineering superiority, beauty of design and finish, exclusive mechanical features, quietness and super-efficiency. Three models, from 250 to 10,000 ft. steam radiation.



**S-N Air Conditioning Equipment**

Installations of complete equipment for automatic air filtering, air cooling, and humidifying in conjunction with automatic heating.

*Today's*

# GREATEST OPPORTUNITY

## S-N "Junior" OIL BURNER

with these unequalled PROFIT-MAKING FEATURES ~

## IN THE HEATING FIELD

**1 Retail Price — $170.00**

(Plus small installation cost). The price opens an enormous market — everybody a prospect. And price includes liberal discount to dealers.

**2 Oil Heat at the Cost of Cheap Coal**

Burns the heavier oils (as well as Nos. 1, 2 and 3) efficiently. Even crankcase drainings can be used.

**3 Any One Can Install It**

No oil burner experts needed. The purchaser can install if he desires. Fits any type of furnace.

**4 No Servicing Needed**

You can sell this burner and forget it. No delicate parts to get out of order or to keep adjusted. A practically trouble-free burner. (Nozzle has 110 times the area of pressure nozzles of same capacity.)

*Write Today for Full Particulars*

### *A Thoroughly-Tested Burner*

L. L. SCOTT

Before offering the S-N "Junior" generally, some 400 to 500 burners were quietly put out and have been in service for three years—with practically no service.

Like all other units in the S-N line, the S-N "Junior" is the product of Scott and Newcomb, who during the past 16 years have created practically every important patent in the oil burner industry.

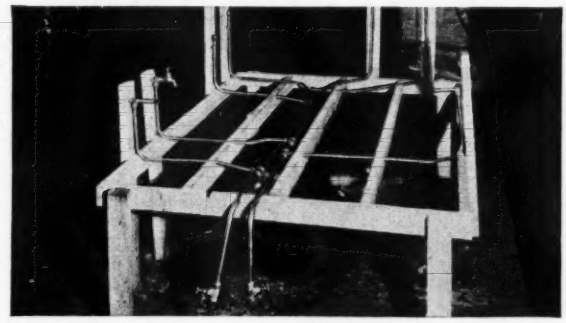
E. C. NEWCOMB

**SCOTT-NEWCOMB INCORPORATED**

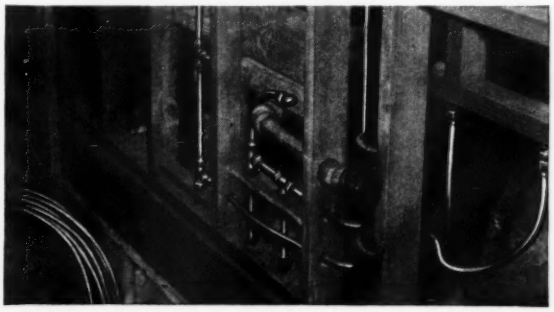
SCOTT S-N NEWCOMB

**ST. LOUIS, U. S. A.**
1935-F PINE STREET

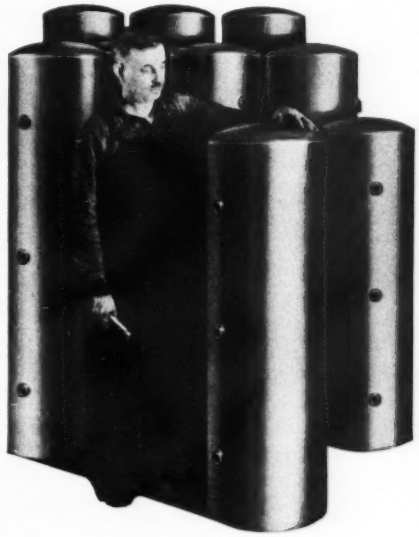
# The Revere Crier



**Tested** far beyond the demands of actual service . . . this typical bathroom system of Revere Copper Water Tube . . . set up by Columbia University, New York. (1) Cold Water Test. Pressure introduced at 100 lbs.; stepped up to 150 lbs.; valves closed. *No leaks!* (2) Hot Water Test. Pressure raised to 250 lbs.; held; then shot up to 1430, 2400, 3000, 3400 lbs. *No leaks!* (3) Torsion Test. Tube completely turned 3 times; then a 2-ft. length of ¾ in. tube, tee in center, twisted in machine. *Even when tube twisted shut, the fittings held!* Write for full report of this unique test.



**Modern** plumbing job, calling for craftsman's tools and skill, is shown in this photo of concealed Revere Copper Water Tube installation. Notice the smooth bends and compact arrangement. For jobs of this type, the flexibility of Revere soft temper Copper Water Tube is a distinct advantage in close quarters. The combination of hard temper and soft temper tubes with compression or Streamline Soldered Fittings meets every installation need.



**Herculoy** Range Boiler Tanks assure a lifetime service for new or replacement installations. Herculoy is Revere's patented engineering bronze of steel-like tensile strength, with corrosion-resistance approximating that of pure copper. Especially interesting is the fact that Herculoy may be readily welded. Leading tank manufacturers can supply Herculoy Tanks in wanted sizes.

**Prestige!**

A good name helps you get business, and in this respect Revere Copper and Brass Incorporated is unique. Ever since Paul Revere introduced copper-rolling to America in 1802, this great historical name has been acquiring reputation for quality products. What's more, Revere has pioneered in developing new and improved products for today's new conditions. Revere products and Revere sales-helps will increase your profits.

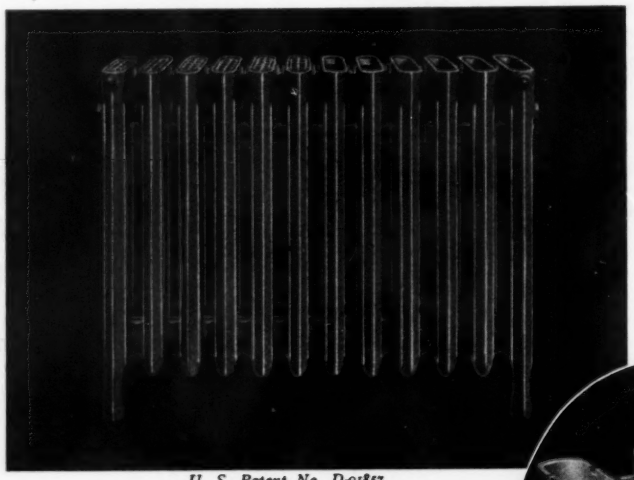
***Say REVERE when you need Copper · Brass · Bronze***

**Revere Copper *and* Brass**

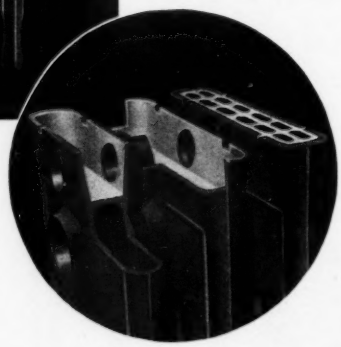
INCORPORATED

EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY · MILLS: BALTIMORE, MD. · TAUNTON, MASS. NEW BEDFORD, MASS. · ROME, N. Y. · DETROIT, MICH. · CHICAGO, ILL. · SALES OFFICES IN PRINCIPAL CITIES

# Inexpensive--- *and* Efficient



Below is a detailed view of the HUMID-HEET Radiator, showing large, connected, porcelain enameled water chambers covered with removable porcelain grilles. It operates automatically and is easily cleaned.



*U. S. Patent No. D-91857*

# HUMID-HEET
## Humidifying Radiator

The Utica Radiator Corporation helps its dealers sell the public. Above is a small reproduction of a half-page advertisement in The House Beautiful. The Utica Finance Plan enables you to offer easy monthly terms.

HUMID-HEET is a new type of humidifying radiator which combines great efficiency with simplicity. It requires only a few of these radiators to provide healthful humidity in the home. Yet it offers dealers an opportunity to interest new prospects and get other work. It costs little more than the ordinary radiator, is simple to install and operates automatically. It will be worth your while to investigate the HUMID-HEET. Just write for complete information.

## Another Big Sales Item!
## MIDGET Radiators

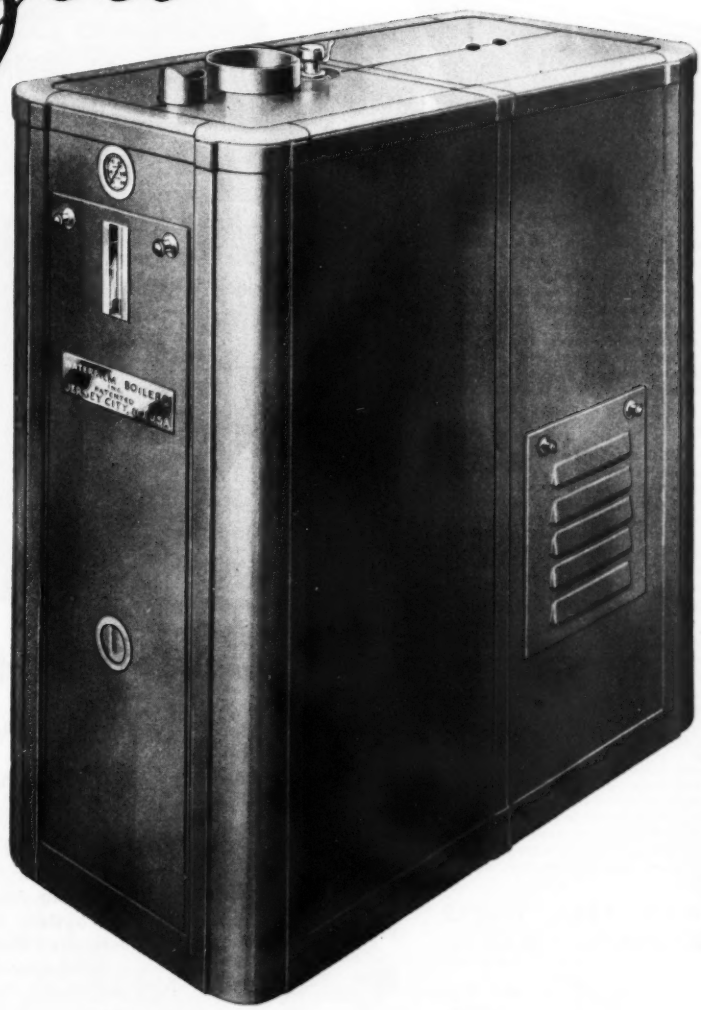
MIDGET Radiators are made in two widths—3¼" wide and 4⅝" wide. They are ideal for concealed work and both inconspicuous and attractive when used in the open.

## UTICA RADIATOR CORPORATION
**UTICA, NEW YORK**

**Boston Chicago Detroit Harrison Long Island City Philadelphia Washington**

**The Utica Radiator Corporation also makes a complete line of radiation, two sizes of jacketed boilers and hot water heaters.**

# A FLASH BOILER
# Stabilized



20% of water boiling generates steam quickly.

80% stabilizes the action of the quick steaming generators, holding heat the longest possible time.

A complete unit enclosing boiler and large tank connecting to copper coil for domestic hotwater.

Oil burner of any make fits into ample space.

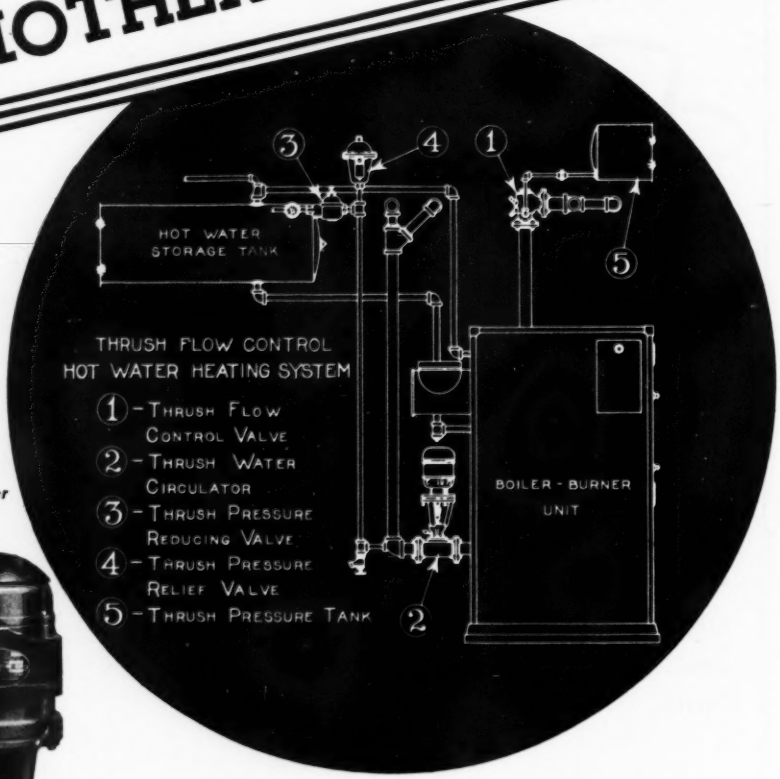
SEND FOR FULL INFORMATION TODAY

DESIGNED from bottom to top to be used with oil burners.

## WATERFILM BOILERS INC

154 OGDEN AVE. JERSEY CITY, N.J.

# EVERY INSTALLATION SELLS ANOTHER ONE FOR YOU!


HOT WATER STORAGE TANK
THRUSH FLOW CONTROL HOT WATER HEATING SYSTEM
1 - THRUSH FLOW CONTROL VALVE
2 - THRUSH WATER CIRCULATOR
3 - THRUSH PRESSURE REDUCING VALVE
4 - THRUSH PRESSURE RELIEF VALVE
5 - THRUSH PRESSURE TANK
BOILER - BURNER UNIT

## Letters from users

*Crane Company Salesman, Escanaba, Michigan,* writes — "The Thrush Circulator that Moersch & Degnan bought two weeks ago is now operating at the Delta Hotel — and how! The water is steaming from every faucet in every part of the Hotel. Burns is the most satisfied customer I have ever seen for he spent the price of three Circulators trying to remedy the situation before we recommended the Thrush Circulator."

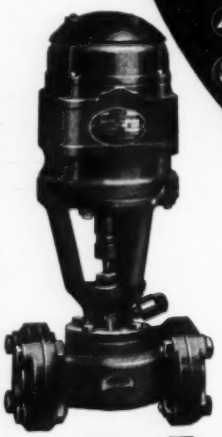
*Clark Oil Burner Sales & Service, Kalispell, Montana,* writes — "Mrs. James Conlon's new Thrush System and Circulator is doing wonderful work. It appears that it will make a saving of approximately 60% in fuel as the burner is now only on 30 minutes, whereas it used to be on for as much as three hours."

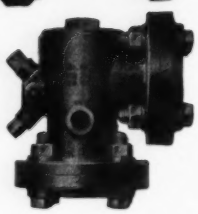
*W. F. Schwartz, Baltimore, Md.,* writes — "Please send me pamphlets on the Thrush Control System. I have installed one system and it is so very satisfactory that many people ask about it, so that some of the folders would be handy."

*Dewey Rotzien, Chicago, Illinois,* writes — "I have been watching one of your Circulators in action and find it gives great satisfaction. I am in charge of a 48 flat apartment building and we need one of these Circulators to make the water circulate at the farthest point from the heat, which is 220 ft."

THEY TELL THEIR NEIGHBORS ABOUT IT!

*Thrush Water Circulator*





*Thrush Flow Control Valve (Patented)*

## THRUSH FLOW CONTROL SYSTEM ASSURES OIL BURNER EFFICIENCY

IT PAYS to sell equipment which pleases users so much *they go out and make other sales for you!* Read the letters at the left and you will decide to push Thrush Flow Control Heating System. It assures utmost operating efficiency on automatic fired Hot Water Heating Plants, and *permits their year around operation* for Domestic Hot Water Supply with fully automatic control in summer or winter.

On Thrush equipped jobs *a reservoir of intensely hot water is available for instant distribution* throughout the heating system when heat is needed, but there is no circulation when heat is not required. This reduces fuel consumption, prevents overheating, and assures a really hot Domestic Hot Water supply. *Use the coupon to ask for our new booklet.*

MAIL THIS COUPON!

H. A. Thrush & Co., Box 459, Peru, Ind. Please send booklet describing Thrush Flow Control Heating System and its advantages for use with automatic firing devices.

Name .....

Address .....

City .....

State .....

**H. A. THRUSH & CO.**
**PERU, INDIANA.**

# BURNHAM
# WELDED STEEL
## ALL FUEL
# Heating Boilers

No, you are wrong. This is not "a farmed-out boiler." One made by some other company and our name put on the door plate.

It is an honest-to-goodness Burnham product. One made in our own steel boiler plant at Geneva, New York, which plant has been making steel boilers for 30 years.

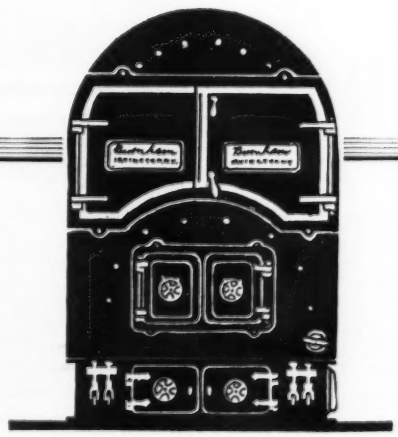
IT can be quickly and easily adapted to burn all kinds of fuel. For high volatile Bituminous coal, it can be converted into a smokeless boiler. If you like, it can be a Three-Purpose Boiler doing heating, supplying hot water, and burning garbage.

Its sizes give a heating range up to 46,000 square feet of steam radiation oil fired.

Send for 16-page catalog giving you the full facts you want.

Burnham Boiler Corporation

Irvington
New York



Representatives in all
Principal Cities

# 5-★ POINT SERVICE

*Lets the pup be your furnace man and weather man, too.*

# BRYANT

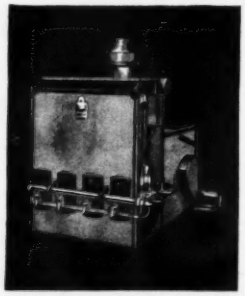
*Gas*

EQUIPMENT

**THE BRYANT HEATER COMPANY**

17824 St. Clair Avenue • Cleveland, Ohio

SALES-ENGINEERS IN 40 PRINCIPAL CITIES



## AIR CONDITIONING

★

Bryant Prepared-Air Equipment is integrally designed for heating, humidifying, cooling, dehumidifying, cleaning, and distributing the air in all or any part of a residence.

## STEAM, VAPOR, and HOT WATER HEATING

★

The famous Bryant Boiler is the simplest and most completely automatic of gas heating plants. Bryant Gas operated automatic heating controls have been the most satisfactory and dependable for 20 years.

## WARM AIR HEATING

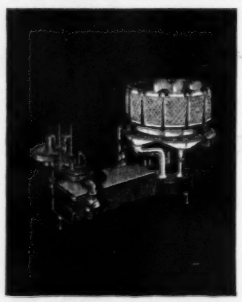
★

Bryant Automatic Warm Air Furnaces embody the latest progress in the rapidly expanding science of conditioned warm air heating.

## COMBINATION STEAM-AND-WARM-AIR HEATING

★

The Bryant Dualator makes it practical to heat one part of a house with conditioned warm air, the rest with steam heat or hot water radiation.



## CONVERSION HEATING

★

Bryant Conversion Burners, at little cost, transform a coal or oil burning boiler or furnace into an automatic gas-heating plant.

DOMESTIC ENGINEERING
Automatic Heat and Air Conditioning Section

*June, 1934*

# Back Up Sherman

In announcing his decision to give full time to combating and correcting the destructive features of gas company competition, R. M. Sherman, president of the American Oil Burner Association, deserves the full support of all those interested in the progress of the automatic heat and air conditioning industry.

Both in its present and in its future implications, competition by gas companies along lines that many of them are now following, holds a menace to both dealers and manufacturers—and in the long run to the public. Freed of the responsibility of earning a profit from appliance sales because the disposal of fuel will recover any merchandising losses, the gas companies can and many do merchandise along lines that no accountant would sanction and under which no business man could survive.

Mr. Sherman in his prompt and positive step offers the dealers and manufacturers, not only in the oil burning appliance field, but in the gas and coal and accessory divisions of the industry, the incentive to oppose the stifling effects of this uneconomic competition before its destructive influence goes too far.

The history of gas appliance selling in other lines uncovers the devastating effect of these gas company practices. Under the apparently reasonable excuse of taking on the burden of pioneering sales, the gas companies can promote appliances without regard to earning a profit. Their business looks attractive to manufacturers who desert the dealers, who are doing the field selling, in favor of the utility with its larger orders, prompt payment and little or no resistance to paying a profitable price.

But when the dealers' work has been broken down, because he can not survive on the methods the utility uses, the utility has the manufacturers at its mercy and can and many do set their buying prices at sacrificial levels. Thus the dealer suffers first under gas company methods but the appliance manufacturer is next in line.

With the oil burner dealers and manufacturers bound by a code which calls for sound business practices, the gas companies should not be

free to operate in defiance of those practices which the government has approved as fair to the business man and to the public. Washington authorities can provide the remedy by making the gas companies follow the same methods the oil burner men must pursue. The request is reasonable and you have a part to play in getting it answered. Mr. Sherman's efforts should win your prompt support.

---

# Sherman Fights Gas Company Sales Methods

"A SPECIAL joint meeting of the directorates of American Oil Burner Association and the Distillate Burner Manufacturers Association was held at Hotel Biltmore in New York on May 7 to consider the condition now facing the oil burner industry with respect to what is deemed as unfair competition from the gas industry, and also to review the code problems confronting the oil burner industry.

"R. M. Sherman, president of the A. O. B. A., who announced his resignation from the Oil Burner Code Authority for the expressed reason that he would be able to give full time to the gas problem, stated that the program of the Association will include solidifying the industry in a drive to carry the facts of the unfair competitive methods used by the gas industry to the public and to municipal, state and federal authorities having jurisdiction.

"While Mr. Sherman pointed out that experience in typical gas territories such as Chicago, Boston, Washington, St. Louis and New Orleans indicated that the consumer once enjoying automatic heat eventually comes around to automatic oil heat as being far more economical than gas, the paralyzing effect caused by the gas company campaigns while active constitutes the industry's major national problem.

"Confirming this viewpoint from his experience in Chicago, C. J. Bassler, chairman of the special committee on gas competition, stated that subsequent to the extravagant advertising and merchandising campaign by the utilities there, about 30 per cent of the installations put into homes by the gas companies last summer had been removed already because of the excessive and unanticipated costs of heating with gas.

"'Because no action has been forthcoming from the NRA with respect to unfair competition on the part of the gas industry and because the oil heating industry is looking toward its biggest sales year,' Mr. Sherman said, 'the Association proposes no further delay

(Continued on Page 110)

R. M. Sherman, president of the American Oil Burner Association

Fig. 1—"Proper selling often will disclose the 'I can't afford it' prospect can spend something more substantial than stage money and can sport something better than phoney jewelry"

*Dealer Tells How to Sell Oil Burners, Electric Refrigerators and Other Domestic Appliances to Prospect Who Attempts to Say*

# "I Can't Afford It"

## Methods Described Have Sold More Than 1500 Burners

"DON'T take the 'I can't afford it' prospect too seriously these days. The proper selling technique will often disclose that the 'I can't afford it' prospect can spend something more substantial than stage money and can sport something better than phoney jewelry," said J. Kelly, of Kelly and McAlinden, heating dealers, with showrooms in Perth Amboy and New Brunswick, N. J. "Individuals are less liberal with money today but it isn't as scarce as the 'I can't afford it' prospect would have you believe. The day before the sales tax was put on electric refrigerators we sold 22 refrigerators to walk-ins. About seventy per cent were cash sales. This statement may beget skeptics, but last summer we were working 15 outside salesmen and these men played heavily on the 'Buy before the tax and save money' appeal. This warning produced the avalanche of last-minute sales. Purchasers couldn't afford to buy until the tax boosted the price, then they dug up the hoarded cash. During the last two years our cash sales on refrigerators were about 50 per cent of sales. The salesmen advise that almost every prospect offers an 'I can't afford it' excuse today, yet we ran tenth highest in the country on refrigerator sales, exceeding the quota assigned by the manufacturer by 125 per cent. We just close our

*Proven sales ideas and arguments are presented in this article which should assist any organization to meet and overcome the sales resistance of the prospect who needs a push in order to make him buy. An enviable record of domestic appliance sales and service stands to support these methods—Over 1500 oil burners, and refrigerators into the thousands*

ears to 'I can't afford it' and go after the real money.

"We find that the easiest way to overcome the 'I can't afford it' objection is to take the prospect off the defensive. When a prospect says he can't afford to buy we go on explaining the advantages of the product, then interpolate apologetically with, 'But, of course, since you can't afford to buy,' and it is surprising how many 'I can't afford it' prospects will take the aggressive at this point and insist that they can afford to buy. The fact that the salesman seemingly drops his sales attack takes the prospect off the defensive and he assumes the natural bent of a self-respecting individual who can satisfy his normal requirements if he is so inclined.

"We average a 25 per cent down payment on time payments, although we will sell as low as 10 per cent down. Here, too, our salesmen take a prospect off the defensive by asking, 'How much can you afford to pay down?' In most instances the prospect advises that he can afford more than the salesman would have asked in the first place. Few contracts run more than one year. Many are paid up in six months because of our selling procedure. On monthly payments we handle the prospect the same as on down payments. We ask him 'How much can you afford to pay each month?' and the prospect usually quotes a larger monthly payment than our minimum.

"Do not let the 'I can't afford it' complex induce you to emphasize minimum down payments and maximum term installment contracts. Sell on these terms, if necessary, but try to coax the best bargain. The majority of installment purchasers will pay up fast if sold the idea, but many will pull the old 'I can't afford it' objection and make the lowest down payment and smallest monthly payments possible unless properly handled. On collections we also hear 'I can't afford it,' but we get the payments by following a procedure similar to that on sales. We take the delinquent debtor off the defensive by substituting sympathetic interest for collection pressure. We ask the delinquent, 'How much can you afford to pay?' and 'When can you afford to pay?' and usually get settlements faster this way than by utilizing the usual collection procedure.

"The 'I can't afford it' objection has always been a bugbear to dealers and salesmen and during these off-years it has been more of an ear-sore than ever, yet many of these poverty pleas are as spurious as phoney diamonds and stage money. The dealer who takes the right mental attitude toward 'I can't afford it' in boom times or gloom times and combats this objection with a studied selling technique will close many sales that otherwise would get away."

Kelly and McAlinden have been selling electric refrigerators for 18 years and oil burners for 15 years. They have sold more than 1,500 oil burners and their refrigerator sales run into the thousands. One or two refrigerators installed in 1916 are still functioning. At that time a domestic two-door refrigerator sold for about $1,200. Kelly and McAlinden have been using outside salesmen for ten years and always employ from ten to fifteen men. They have nine listings in the telephone directory, four for refrigerator service, four for oil burner service and one for general office.

**Fig. 2—"They have nine listings in the telephone directory, four for oil burner service, four for electric refrigerators and one for general office"**

**Do you know how to figure the cooling requirements of the room pictured here? This article presents a typical outline to follow on jobs of this type**

# How to Condition a Living Room with Units

By Harold L. Alt

*A complete problem is solved in this article. Also, you will find facts here to apply in later articles of this practical series. Likewise, other installments will include ideas for this problem*

THE ordinary summer air conditioning unit or, as it more frequently is termed, unit air conditioner generally is supplied with a machine having a capacity of from ¾ to 1¼ tons of refrigeration and for the ordinary small room the ¾ ton size will prove ample if no unusual sources of heat are met. In a moderate sized room it would be better to go to 1-ton capacity and for a very large room to 1¼ tons.

It should be noted at this time, however, that the manufacturers of unit air conditioners are not yet ready to guarantee any given condition of temperature and humidity in a room the utmost that it is possible to obtain being a guarantee that the room will be "comfortable" after the conditioner is installed and placed in use. This, doubtless, is due to the relatively small size of the units as compared to central systems so that an open door, which would produce no appreciable effect on a large system, might introduce a load of 50 per cent greater than a unit would be able to handle. Unit air conditioning, however, is more individualistic as each room can maintain its own temperature in accordance with the desires of the occupant, a thing much more

difficult to obtain with a central system where the building, or section of the building, which is conditioned usually is conditioned as a whole, somewhat the same as is done with zoning in heating systems when compared to individual thermostatic radiator control valves.

A ton of refrigeration represents a certain amount of heat absorbed just as a boiler horsepower is a certain amount of heat supplied. A boiler horsepower, for example is 33,523.7 Btu. per hour delivered by a boiler in the shape of steam and in the heating of the feed

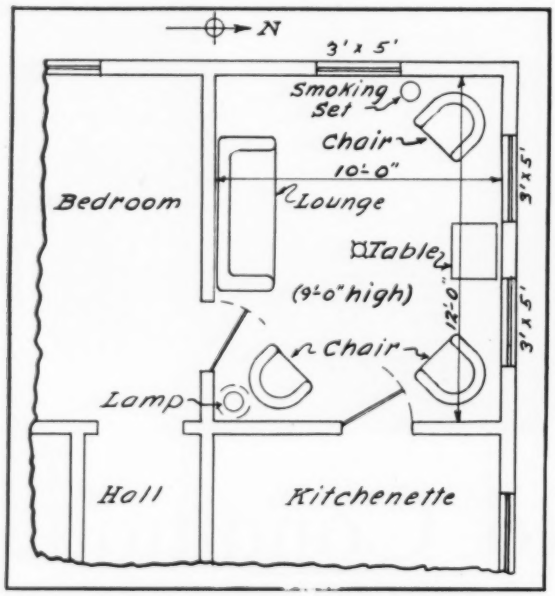



**Fig. 1—This is a plan of the living room to be air conditioned as outlined in the problem stated in this article**

water up to the steam producing point; a ton of refrigeration on the other hand is 199.038 Btu. per minute this ordinarily being taken in practical calculations as

200 Btu. per minute,
12,000 Btu. per hour, or
288,000 Btu. per day

and care must be taken to note whether the heat to be removed has been calculated per minute, or per hour, so as to use the proper divisor in order to reduce this to tons of refrigeration.

Let it be assumed that the total amount of heat to be removed in a given installation for both *sensible heat and dehumidifying is 15,000 Btu. per hour. What will be the tonnage of the refrigeration machine required?

In this case the heat to be removed is in terms of the hourly rate so it must be divided by the hourly equivalent of 1 ton of refrigeration to ascertain the tonnage; thus:

*Note—Sensible heat is heat which will show on the dry bulb thermometer while dehumidifying is the latent heat released from the moisture in the air, when condensing, of which more will be said in a later article.

**Fig. 2—The air conditioning unit is located as indicated at the right**

15,000 Btu./12,000 Btu. or 1.25 tons.

So it will be seen that this requires a refrigeration machine of 1¼ tons capacity.

### PROBLEM

In a residence it is desired to condition the living room illustrated in Fig. 1. What should be the method proposed?

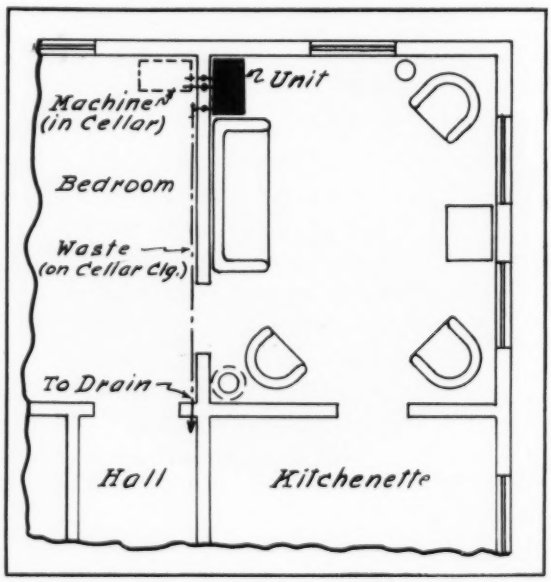
### SOLUTION

In residence work where the room to be conditioned is on the ground floor the situation is greatly simplified as the machine can be placed in the cellar for summer air conditioning and the piping simply carried up through the floor above to the unit. Now in the first place what conditioning is required. Will it be summer, winter or both?

If it is to be a year round air conditioning unit, complications are likely to develop unless a unit is selected which can accommodate itself to the heating system already in the house. If hot water heating is in use then the heating element in the unit must be suitable for hot water use; if a steam system supplies the heat, then the heating element in the unit must be of such a design as to be suitable for use with steam. If a furnace system is in use then some one of the air conditioners applicable to furnace systems may have to be substituted. For the present it will be considered that this living room is to be cooled in summer only and that no humidifying in winter or heat is expected from the unit.

### ONE ROOM TO CONDITION

Since there is only one room to be conditioned the installation will be of the unit air conditioner type. As it is for summer use only there will be nothing to connect to the unit except the refrigerant lines and a waste, both of which will be run through the floor and connected in the cellar to the refrigeration machine as far as the refrigerant lines are concerned and to the ice box sink or a floor drain for the waste. An inspection of the floor plan of the room shown in Fig. 1 indi-



cates a space near the outside wall where the unit may be located without interference with the furniture arrangement and this space will be selected. The room, after the installation of the unit, will appear as shown in Fig. 2 and the air circulation to be expected will be somewhat along the paths indicated in Fig. 3.

It is presumed that the reader is able to calculate heat losses from a building for the sizing of radiators by the Btu. method but, if not, it may be said that heat passes through walls and windows with a certain rate of flow which flow varies with every material and thickness of material. The coefficient for any particular construction, such as a wall, is the amount of heat which will pass through that particular material of that particular thickness, per square foot of area, per hour, for 1 deg. Fahr. temperature difference between the air on the two sides of the material. For example, glass has a coefficient of about 1.1 Btu. and an ordinary frame house wall about 0.25 Btu.

### HEAT TRANSFER CALCULATIONS

On this basis the area of the North Wall of the room will be 12 ft. long by 9 ft. high or 108 sq. ft., out of which there are two windows each 5 ft., by 3 ft., or a total of 30 sq. ft., of glass leaving a net wall area of 108 sq. ft.—30 sq. ft., or 78 sq. ft. Therefore, the heat passing through the glass will be the number of sq. ft. of glass times the coefficient for glass times the temperature difference between the two sides of the glass, while the loss through the wall will be the net wall in sq. ft. times the coefficient for the wall times the temperature difference between the two sides of the wall.

This results in a heat transfer for the North Wall of the following:

Gross wall .....108 sq. ft.
Glass ..... ... 30 sq. ft.

Net wall ..... 78 sq. ft.

Heat transmission for 10 deg. temperature difference:
Glass.....30x1.1 x10 or 330 Btu. per hr.
Wall.....78x0.25x10 or 195 Btu. per hr.

Total Transmission.....525 Btu. per hr.

Similarly on the West Wall the length of the wall is 10 ft., and the height 9 ft., making 90 sq. ft., gross out of which one window of 15 sq. ft., must be taken leaving a net wall of 75 sq. ft. The heat transmission for this wall then is as follows:

Gross Wall ..... 90 sq. ft.
Glass ..... 15 sq. ft.

Net Wall ..... 75 sq. ft.

Heat transmission for 10 deg. temperature difference:
Glass.....15x1.1 x10 or 165 Btu. per hr.
Wall.....75x0.25x10 or 188 Btu. per hr.

Total Transmission.....353 Btu. per hr.

On the inside partitions the coefficient will be 0.34 and all doors are counted as glass. This gives for the South Wall of the room the following:

Gross Wall.....108 sq. ft.
Door ..... 16 sq. ft.

Net Wall ..... 92 sq. ft.

Transmission losses through partition for 10 deg. are:
Door..... 16x1.1 x10 F or 176 Btu. per hr.
Wall.....108x0.34x10 F or 367 Btu. per hr.

Total transmission .....543 Btu. per hr.

and for the East Wall

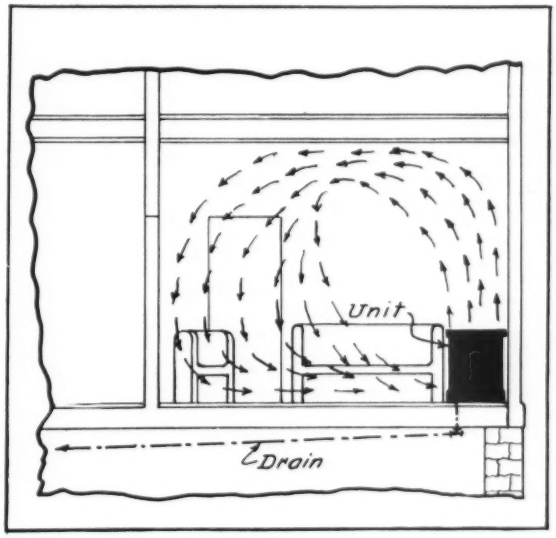



**Fig. 3—An elevation of the living room shows how the air from the air conditioning unit is circulated throughout the space**

Gross Wall ..... 90 sq. ft.
Door ..... 16 sq. ft.

Net Wall ..... 74 sq. ft.

Transmission losses through partition for 10 deg. are:
Door.....16x1.1 x10 or 176 Btu. per hr.
Wall.....74x0.34x10 or 252 Btu. per hr.

Total Transmission.....428 Btu. per hr.

The ceiling coefficient is 0.28 and the floor coefficient is 0.46 and the area of each is 10 ft. x 12 ft. or 120 sq. ft., so that the heat transmission will be

Ceiling.....120x0.28x10 or 336 Btu. per hr.
Floor.....120x0.46x10 or 552 Btu. per hr.

Total Transmission .....888 Btu. per hr.

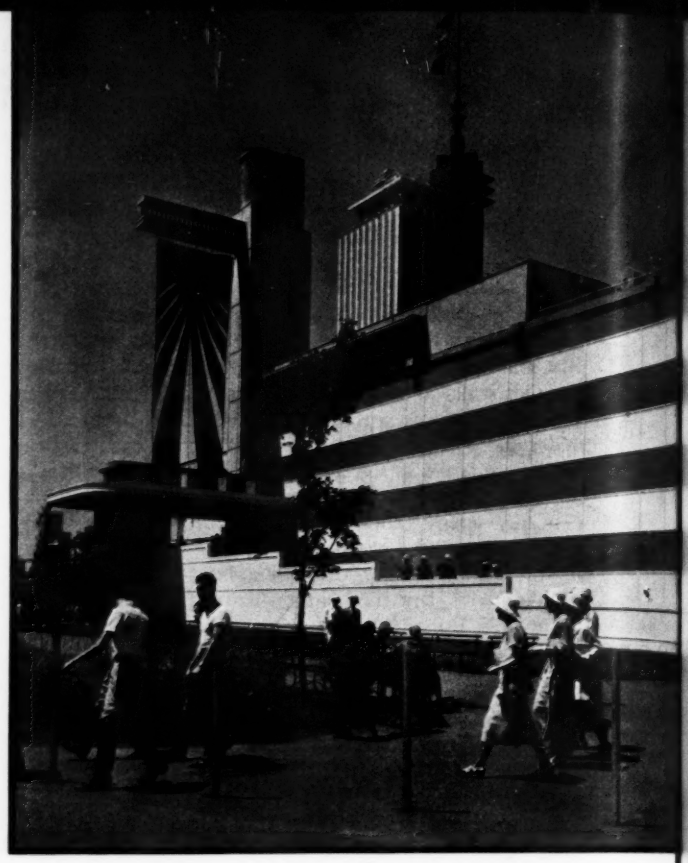
This makes the total heat transmission for the six sides of the room (four walls, ceiling and floor) a total of

North Wall .....525 Btu. per hr.
West Wall .....353
South Wall .....543
East Wall .....428
Ceiling .....336
Floor .....552

Total for Room.....2,737 Btu. per hr.

(Note—There is no exposure factor to be considered in cooling calculations, this being taken care

(Continued on Page 107)



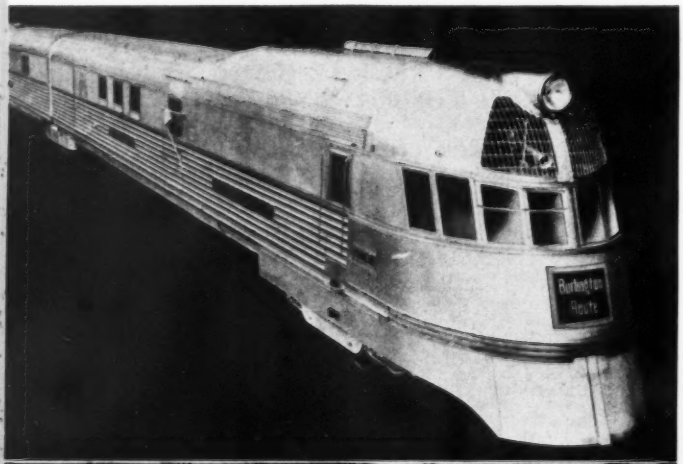
# Air Conditioning is

ONE of the 1934 Century of Progress Exhibits will consist of the new high-speed Diesel-electric train of the Chicago, Burlington & Quincy Railroad, which just recently has been constructed. It includes, among other improved mechanical and electrical apparatus, specially designed air conditioning equipment.

The new train, which represents a radical departure from anything ever before developed in railway passenger equipment, comprises three cars, permanently coupled to form what is known as a completely articulated train, the total weight of which is only 80 tons, as compared with an average weight of 400 to 500 tons for steam trains of like capacity. The new train will develop a service speed of approximately 100 miles per hour.

The air conditioning equipment of the train is of special light weight construction throughout, in compliance with specifications which stipulated that the total weight of the complete air conditioning system, with auxiliary equipment, should not exceed 3,000 pounds.

The condensers, compressors, fans and accessory equipment of the system were especially designed for this train, and were more or less complicated and extremely compact, in view of the small space in which the equipment must be installed, and the extreme light weight construction required.



All of the fans, as well as outer casings for the condenser and compressor units, are of aluminum. The compressor unit is as large as can be accommodated in the limited space. In fact, the installation of this system brought into play no little engineering skill, in order to fit the several units of air conditioning equipment into the small space between the car floor and the outside finish sheets beneath the car, where the superstructure resembled to a great extent that of a dirigible, with struts running in all directions. The chief engineering problem involved was to install the equipment in such a manner that the outside air would pass over the condenser, as well as over the compressors and through the fans. All parts were designed and constructed to eliminate every ounce of unnecessary weight. Flexible pipe connections were used, with joints specially sweated to eliminate possibility of leakage, and to insure most efficient application in the congested space beneath the cars. Equipment with moving parts was mounted on rubber insulating pads to reduce vibration and to insure extreme quietness in operation.

**Above: View of the tower of Hall of Science. Upper left: Exterior view of Burlington's new air conditioned train. Lower left: Buffet grill on the train with ventilating provisions**

The windows of this train are sealed, yet the air conditioning system is so designed that a constant volume of fresh, filtered air is circulated through the train, and all stale air is exhausted from the train. Air distribution is by means of bulkhead delivery. Air ducts of irregular shape are designed to fit compactly into the spaces between each car's structural members. Freon is the system's refrigerant, controlled by thermostatic expansion valves.

The air conditioning equipment consists of the following units:

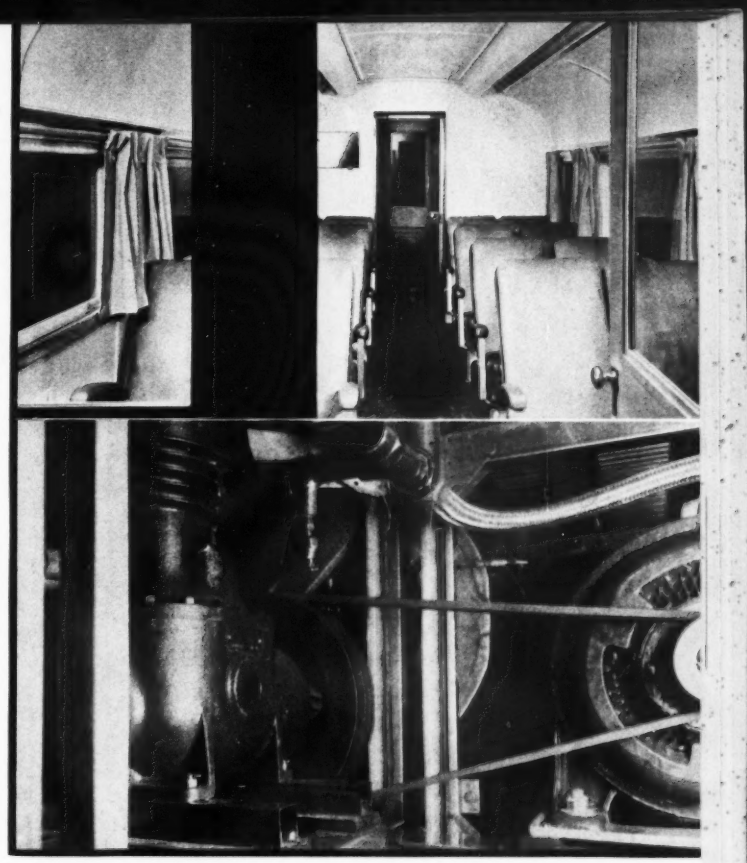
3—2⅝"x2½" compressors complete, with flywheels, cutouts, gauges, valves and necessary accessories.

3—Air cooled condenser coils complete, with 2 high-pressure liquid receivers, liquid indicator and purge valve.

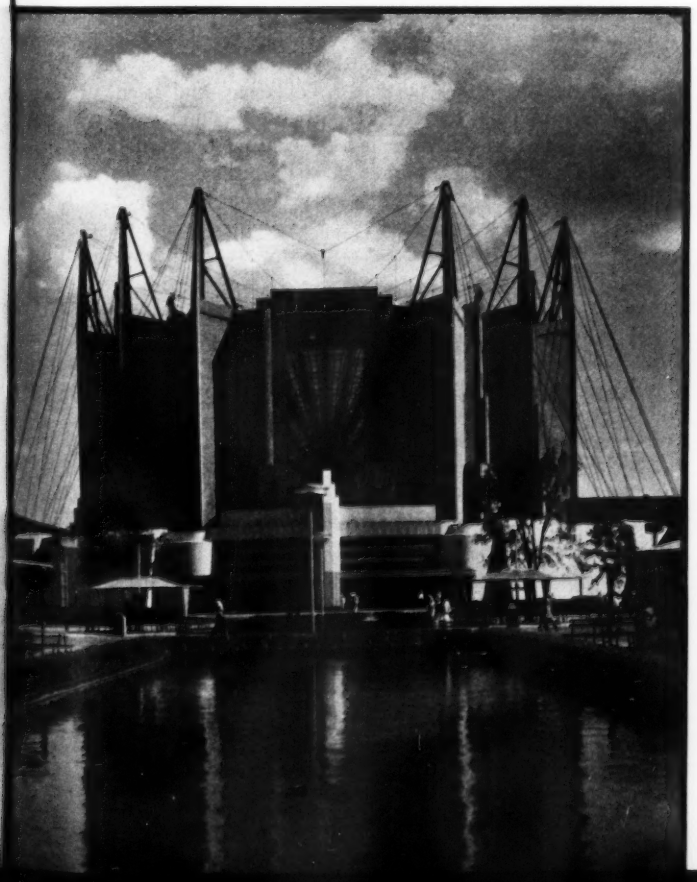
3—Evaporator units complete, with heating and cool-finned coil, aluminum fan assembly, aluminum casing and drip pan.

3—Thermal expansion valves, refrigerant controls, including strainers, valves and auxiliary equipment.

The equipment used on the train will carry a weight of 1,584 lb., which, together with 818 lb. added as the weight of necessary electrical equipment, such as motors, controls, etc., gives a total weight for this equipment of 2,402 lb. This weight includes the bare equipment only, and does not cover the weight of refrigerant lines, water lines or electrical cables.



# Feature of '34 Fair



Heating is accomplished by the use of a 500-lb. per hour steam boiler good for 100 lb. pressure. This boiler is fired with an oil burner with automatic control and the system is arranged for condensate return, so that very little of any make-up water will be necessary. The primary heating system is by means of heated air introduced through the air conditioning ducts and the supplementary heating system is by side wall radiation in all passenger compartments. All heating in passenger compartments is thermostatically controlled. The heating in the baggage and mail compartments is by direct radiation.

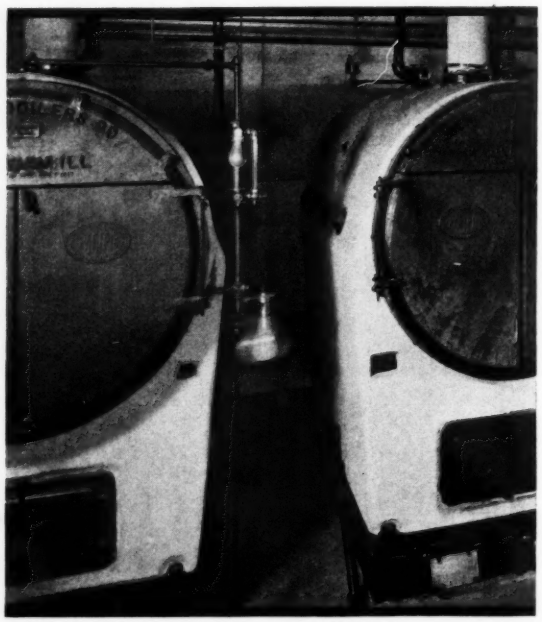
Passenger compartment lighting is indirect. The lights are housed in ducts running the length of the compartments approximately over the center of the seats.

The power plant for this train consists of one 2-cycle Diesel engine with eight cylinders in line, super-charged. Rated h.p. of this engine is 670 at 750 r.p.m.

**Left: Looking southward toward Travel and Transport Building of Fair. Above, top: Interior of smoking room. Above, bottom: View of the air conditioning compressor and fan**

# Two Boilers are with Long

*Automatic heat does not stop with the installation of the oil burner, gas burner or automatic stoker. As soon as the firing unit is in, it becomes a part of the entire heating system and must be coordinated as such. This article tells what can happen with flash firing in describing a trouble job*



By Earl Brown

A FEW months ago I received a long distance call from a heating contractor in southeastern Iowa. In this conversation I explained to him our standard method for cross-connecting two low pressure boilers, as shown in Fig. 1. It was necessary to give him this information over the phone because he needed it immediately. We did not hear from him again until he called me over the phone about three weeks ago.

After an exchange of courtesies I became convinced that there was something on his mind, so I asked, "What's worrying you?"

"Plenty," he answered, and then proceeded to relate his troubles. "Do you remember the boiler job I called you about, two or three months ago? You told me over the 'phone how to cross-connect two low pressure boilers."

"Yes. What is wrong with them?"

"Everything, I guess."

"Did you follow my suggestions?"

"Yes, I think so."

"Tell me what you mean when you say that everything is wrong."

"When we started up we used only one boiler at a time, but the other day we had a cold snap and used both of them. Then the fun began. We couldn't keep both water lines at the same level. At first one water line stayed about 10 in. higher than the other, but we finally fixed that, and everything was fine until they got a new carload of free burning coal and now we have more troubles. This time the water almost disappears from the water glass."

"What do you mean by that?"

"Well, if we fire boiler No. 1 first, the water will almost disappear while we are firing boiler No. 2. Then if we fire boiler No. 2 first, the water will act the same way in it when we fire the first one. I'm stumped. Can you come down to help us?"

"Not so fast. Perhaps we can find the trouble over the phone."

"I've lost all hopes of doing anything satisfactorily over the phone, since this trouble started, but what do you suggest?"

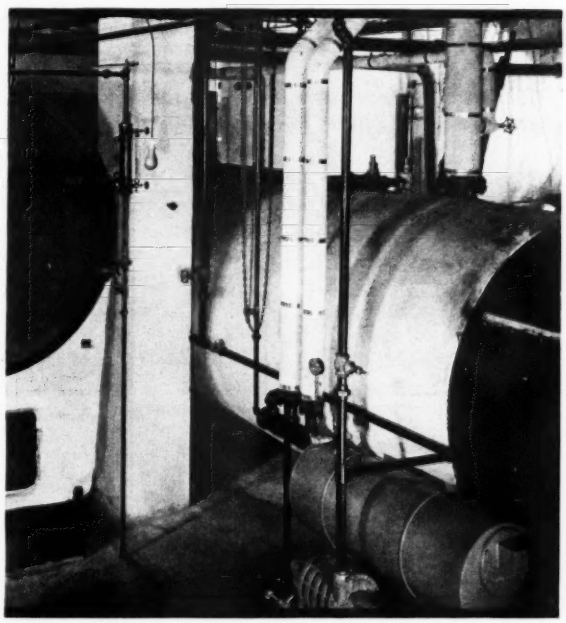
"You said you followed our plans, didn't you?"

"Yes—practically so."

"What do you mean by 'practically so'?"

"Oh, we made a few minor changes, but they don't amount to much."

# Piped Together Distance Connections



**"When we started up we used only one boiler at a time, but the other day we had a cold snap and used both of them. Then the fun began."**

"What were they?"

"For one thing, you forgot to tell me to put check valves in the return to each boiler. The supply house engineer called this to my attention, so we put them in. Then—"

"Wait a minute. Did you say you put check valves in the return connection to each boiler?"

"Yes. Wasn't that the thing to do?"

"I'm afraid it wasn't. If you will take the flapper out of both of those check valves, there will be no more trouble.

"Then the check valves can't work."

"No, they can't work. As a matter of fact we don't want them to. If you wish to pay the phone bill, I'll tell you why we don't want check valves in these boiler return connections."

"I'm willing. Go ahead. I always like to understand the reasons for doing things."

"Before I do any explaining, I want you to tell me what you did when you found that the water line of one boiler was always higher than the other. I believe you said you remedied that."

"Yes, we did. After trying almost everything we could think of we opened both check valves and found one of them stuck so that it was almost closed. We removed the flapper and ground down the pins until it worked freely. This seemed to help."

"Which check valve was that?"

"The one on the boiler with the low water line."

"All right. Now I'll explain why we don't use check valves. You know, of course, that water seeks its own level. That is the first thing to keep in mind. In order to keep the explanation as simple as possible, we will illustrate with two barrels of water instead of steam boilers. I think it would be better if you made sketches as I make them, just as we did when we worked out the boiler connections on this job."

"I made sure I had a pencil and some paper handy before calling you, so go right ahead."

"Draw two barrels side by side and mark them 'Two open barrels of same size standing on same level.' Draw a straight 3-in. pipe between them and close to the bottom of each one. Show a tee in the center of the pipe. Into this tee show another pipe and mark it 'Pump Discharge.' At the other end of this line show a pump and mark it 'Centrifugal Pump. Pumping for 5 minutes. Idle for 5 minutes'."

"I begin to see what you are driving at. Keep on."

"Now show an arrow out of each barrel or show a man beside each barrel if you want to. The general

idea is that we want to show that water is being removed from both barrels at the rate of four bucketsful per minute. Are you with me?"

"Yes."

"With this set-up the same amount of water will be pumped into each barrel, won't it?"

"Let me see—Yes, the water will be divided equally between the two barrels because the pump discharge

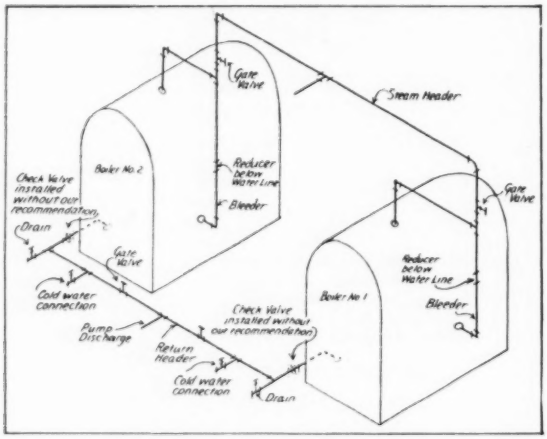



**Fig. 1—This illustrates the boiler connections as they were installed, including those which were not recommended**

tee is halfway between them, the barrels are the same size and they are on the same level."

"If the water is removed at the same rate from both barrels, the water lines will remain on the same level, won't they? Now, suppose the man taking the water from the left barrel speeds up a little and takes five bucketsful per minute, while the other man continues to remove four per minute. What will happen to the water lines?"

"The water line in the left-hand barrel will be lower

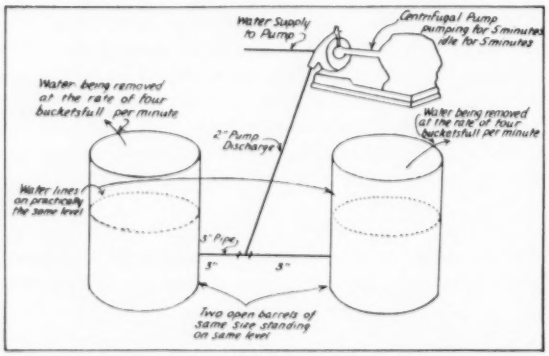

Water Supply to Pump
Centrifugal Pump pumping for 5 minutes idle for 5 minutes
Water being removed at the rate of four bucketsfull per minute
Water being removed at the rate of four bucketsfull per minute
2" Pump Discharge
Water lines on practically the same level
3" Pipe
3"
3"
Two open barrels of same size standing on same level

**Fig. 2—"Draw two barrels side by side and mark them 'Two open barrels of same size standing on same level'"**

than the other, but the difference will be very slight for the water levels will almost equalize because of the 3-in. pipe between the barrels, below the water line. Then, too, when the pump starts up, the left hand barrel will receive more water than the other if the water line is lower. I'd say that unless the water is drawn out of one barrel much faster than out of the other, the water lines will remain on practically the same level."

"All right, then, we can add this note, 'Water lines on practically the same level.' Now make another drawing exactly like the first one, but omit the note about the water lines; also, show a check valve on the 3-in. pipe to each barrel with the flapper opening towards the barrel. Mark the check valve in the line to the left hand barrel '3-in. check valve operating freely.' Mark the other one '3-in. check valve stuck 1/10 open.' If both men remove water at the rate of four bucketsful per minute, where will the two water lines be?"

"That's easy. The water line in the right hand barrel will always be lower than the other one."

"Why?"

"Because the check valve leading to the left hand barrel will open freely to let the water into the barrel while

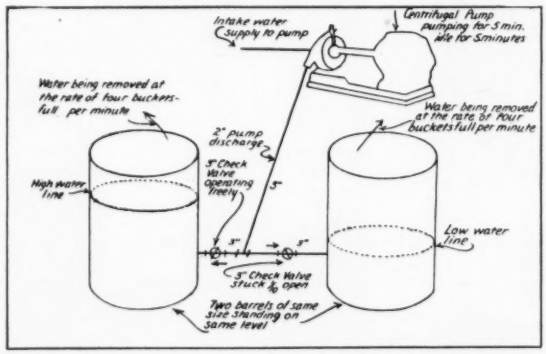

Intake water (supply to pump
Centrifugal Pump pumping for 5 min. idle for 5 minutes
Water being removed at the rate of four buckets-full per minute
Water being removed at the rate of four bucketsfull per minute
2" pump discharge
5" Check Valve operating freely
5"
High water line
3"
3"
Low water line
5" Check Valve stuck 1/10 open
Two barrels of same size standing on same level

**Fig. 3—"If both men remove water at the rate of four bucketsful per minute, where will the two water lines be?"**

the one on the right hand barrel is stuck almost closed. Naturally it will let less water through. As a result the water line in the right hand barrel will always be the lower one."

"But won't the water seek its own level, just as you said it would on the other sketch?"

"No, because the check valve on the left hand barrel will not let the water flow out of its barrel."

"That's right. The same thing would happen if the right hand check valve had a heavier flapper than the other, wouldn't it?"

"Yes, it would."

"Then let's show a high water line in the left hand barrel and a low one in the right hand barrel. Now draw another sketch the same as the first one, only this time mark both check valves '3-in. check valves operating freely.' Then indicate that the man working on the left hand barrel removes four bucketsful per minute and the one working on the right hand barrel removes five per minute. Do you follow?"

"Yes."

"Under these conditions, where will the water lines be?"

"The water line in the right-hand barrel will be lower than in the left, because the water is being taken out faster."

"But won't the pump put more water," I said, "into

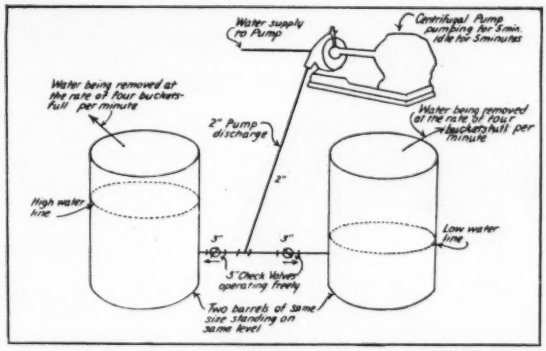

Water supply to Pump
Centrifugal Pump pumping for 5 min. idle for 5 minutes
Water being removed at the rate of four buckets-full per minute
2" Pump discharge
Water being removed at the rate of four buckets-full per minute
2"
High water line
Low water line
3"
3"
3" Check Valves operating freely
Two barrels of same size standing on same level

**Fig. 4—"The water line in the right-hand barrel will be lower than in the left, because the water is being taken out faster"**

the right hand barrel if it has a lower water level, just as you explained before?"

"Yes, but the check valves add so much resistance that the difference in water lines won't mean much."

"Won't the water from the left hand barrel flow into the right hand one because of the difference in water levels. In other words, won't the water lines equalize?"

"No, the check valve on the left hand barrel won't let the water out."

"Then," I said, "we can show a considerably lower water line in the right hand barrel than in the other one because of the check valves."

"Yes."

"Are we now safe in saying that if you want to keep the water lines in these two barrels on the same level that you should not use check valves?"

"Yes."

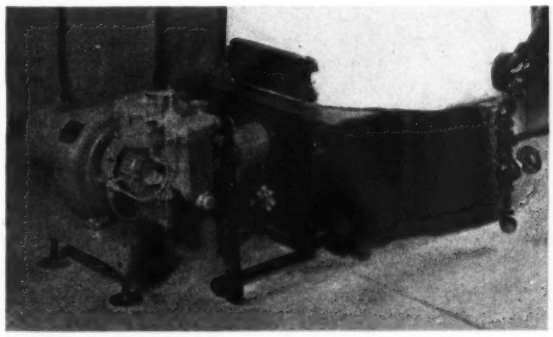
"Let's get back to boilers now. You see that two cross-connected boilers will work out exactly as the barrels of water have, don't you?"

"Surely."

"The first sketch you drew (Fig. 2) shows clearly that when two boilers are connected as we recommended (See Fig. 1) the water lines will equalize under practically all conditions. As a matter of fact, if the return header is of the proper size, there is only a very slight

**(Continued on Page 112)**

**It is as important to service automatic heating equipment in the spring, when it is closed down, as it is to inspect it when it is placed in operation in fall**



# Rules to Follow in Oil and Stoker Shutdowns

UNLESS care is exercised, summer months may be the most destructive of heating equipment. Here are a few guides for doing a thorough job of servicing when the heating plant is taken out of service. When the boiler is fired by an oil burner, the following precautions should be observed:

(1) Pull the entrance switch which disconnects the electrical supply to the burner. This will prevent its accidental operation.

(2) Close the valve in the oil-feed line from the storage tank to forestall accidental discharge of oil into the basement when the burner is not in use.

(3) Oil parts of the burner motor, fan bearings or other parts normally requiring lubrication.

(4) Cover parts of the burner external to the boiler with a canvas if available, or other covering, to keep out dirt and dust if the burner itself is not provided with an inclosure.

For boilers fired by automatic coal stokers, the following points should be observed:

(1) Pull the entrance switch which disconnects the supply of electricity to the stoker.

(2) Oil thoroughly all parts of stoker or appurtenances requiring oil. Follow stoker manufacturer's instructions regarding replacing oil or grease in the gear-case.

(3) Clean the stoker including hopper, motor, blower, etc., removing soot, ash, and residue. Remove any rust or other deposit by scraping with a wire brush or sandpaper. After the stoker is thoroughly cleaned, apply a coat of preservative paint where required to parts normally painted. Particular care should be exercised to keep the motor windings free from coal dust and siftings by blowing out with compressed air, or otherwise cleaning at least once a month or oftener if found necessary. Accumulations of coal siftings in the motor windings have been found to promote burning-out.

**Fig. 1—A pleasant nook in the front of the restaurant is made comfortable by air conditioning. One unit is seen at the rear**

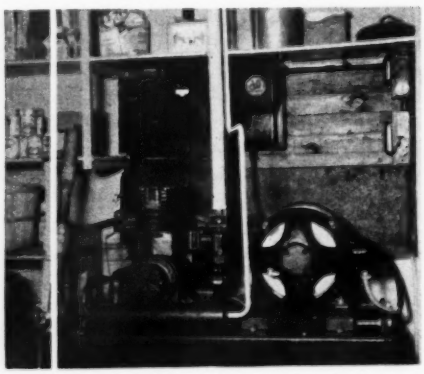
# Eating Sales Mount with Air Conditioning

ENGINEERING plus culinary efficiency plus George Servis.

There you have it—the secret of success behind the Servis Restaurant in Dayton, Ohio, a restaurant that restaurant men study and delve into to find just what there is that has made this restaurant one of the most successful in the Middle West.

George Servis believes that if customers are served a tasty meal of good, wholesome food in an attractive manner and in comfort that they will come back again and again. That he is right is attested by the fact that at noon time and at night seats at his tables and his counter are at a premium.

Servis knows how to tie up engineering with cooking and make it pay—which makes this an engineering story. It is a story in which the slide rule of the engineer has been made to figure out profits on the right side of the food ledger.



*When air conditioning is considered for commercial enterprises, the first question is that of will it bring a return in increased patronage and a corresponding increase in sales. Here is a restaurant which has experienced an increase of at least 15 per cent. Commercial air conditioning pays dividends*

Step into Servis Restaurant on Second Street in Dayton on a Summer's Day when the heat and humidity of the Miami Valley have wilted the collar and taken the gimp out of even the sturdiest. There's a refreshing change. At once the appetite is stimulated. The breath of fresh air is an appetizer—not charged for on the menu — but one which has netted this restaurant thousands of dollars. As one sits down, he forgets that only a minute ago he really wasn't very hungry. Now he actually is hungry. He really wants to eat—and he does.

This restaurant is large. It has a frontage of more than a hundred feet and a depth of more than 75. It has large glass windows all across the front that get the full mid-day sun.

The equipment installed is designed to meet all necessities. The owner can use part, or he can use the whole system. He can adjust it to weather conditions and thus save on the operating expenses. The air conditioning equipment consists of two ten-ton compressors. One is located in the kitchen in the rear while the other is in the front end of the basement. Each is connected to nine unit conditioners located along the wall on either side and through the center. The entire 18 are operated during the hottest spells, while nine are used after the temperature has been reduced, provided the temperature outside is not too high. Each compressor may be shut off by a switch on the restaurant floor if desired, or individual units may be shut down.

All piping is artfully concealed. That from the compressor in the kitchen is carried through behind the moulding, while the pipes from the basement are carried up through the flooring. To the visitor nothing can be seen except the conditioners, themselves, which blend pleasingly with the stippled finish of the walls.

Air conditioning in this restaurant has paid dividends, Servis, who deals in cold facts with absolute impartiality, states that his business last summer was at least 15 per cent better than before he added air conditioning. His restaurant will seat about 300 comfortably. George Servis believes in giving the public the best that can be produced both in meals and comfort.

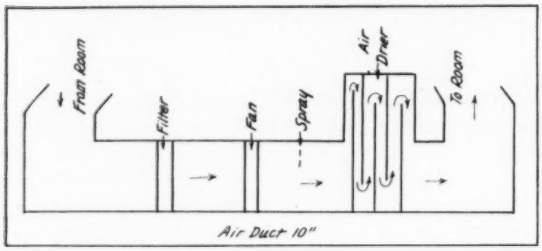
**Fig. 2—On the opposite page at the lower left is one of the ten-ton compressors**

**Fig. 3—At the lower right is the exterior showing some of the 100 ft. of glass which had to be offset in cooling**

**Fig. 4—This photo shows how the units were located along the wall in the part of the restaurant devoted to table service**

# Relief By

*A letter to the Editor—From a Reader in Arizona: Below is a sketch of an air cleaner I am going to install for one of my customers. It is to take*




*care of two sleeping rooms which are being occupied by hay fever sufferers. Do you think that this arrangement would give satisfactory results?*

WHILE the above letter is from a single reader, the inquiry is representative of the questions in the minds of many. It indicates both the demand for information on air conditioning as it applies to the relief of hay fever sufferers, and the business building possibilities in this specialized field. Anyone who has had any experience with those afflicted with this yearly annoyance will recognize the potential interest in anything capable of offering a much sought after relief.

Much investigation into the cause and cure of hay fever has been carried on. Also, a considerable amount of data has been collected as to how much can be expected from air conditioning, mainly filtering, by those subject to this seasonal difficulty. Additional studies are being made. The College of Medicine of the University of Illinois, at Chicago, has been active along this line. Their experiences are summarized in a report prepared by William H. Welker, Ph. D., B. Z. Rappaport, M. D. and Tell Nelson, M. D. of the departments of Physiological Chemistry, Pathology and Medicine respectively. They state that:

For three hay-fever seasons we have been studying the amount of relief that can be given to sufferers from hay fever and from pollen asthma by the filtration of the air furnished to the patients.

Filtration of air for the removal of symptom-producing substances in hay fever and pollen asthmatics and other environmental allergic disturbances is comparatively a new idea from the angle of the ventilating engineer.

From the results obtained in experiments with air filtration in connection with the drying apparatus used in the work on proteins in our laboratory, we believed that it would be possible to remove the greater portion of pollen by the filtration of the air through the proper type of filters.

The filtration of air for the removal of pollen presents a somewhat different problem than the filtration for the removal of the major portion of the dust. In ordinary filtration a small percentage of dust passing through the filters, or through leaks around the edges of the filters, is not an extremely serious matter. However, in filtering air for the removal of pollen, or other environmental allergic material, it is necessary to remove such material as completely as possible because highly-sensitized individuals will respond, with symptoms, to extremely minute amounts of such substances. Under such conditions the whole purpose of filtration would be defeated. The ragweed pollen grain has a diameter varying from 12 to 20 microns. With such minute particles it is necessary to have a very close mesh filter material if any appreciable velocity of air is to be maintained through the filter. In our experience with extremely small particles of soot in connection with the drying apparatus we obtain a greater efficiency by the use of a material with slightly coarser texture through which the air passes very slowly.

In the summer of 1930 we conducted the first experiments with an apparatus consisting of three air-filter units and a blower. The apparatus was constructed so that the air was passed through two of the filter units in parallel, and subsequently, all of the air passed through the third unit. Trouble was experienced because of leakage around the filter forms in the filter units and around the doors of the apparatus into which these units had been built. Therefore for the work of the summer of 1931 our experiments were conducted with two spe-

# from Hay Fever
# the Use of Air Filters

cially-constructed units consisting of a blower with filter forms holding cellulose filters in the intake portion of the machine. Trouble again was experienced with leakage around the filter forms. For the work in the summer of 1932, these machines were rebuilt so that the air passed through two sets of filters and the construction of the supports for the filter forms was improved so that there was very much less apparent leakage.

An eight-bed ward was operated with two of these machines each of which had a capacity of 800 cfm with a filter surface of 22.6 sq. ft. During this season, we also operated a four-bed ward with two machines in which the air was filtered through a single layer of filter material which in this case consisted of a heavy wool felt. Each of these machines had a capacity of 450 cfm with a filter area of 20 sq. ft.

The efficiency of the filters was studied by two methods. First by exposing vaselined slides in the incoming current of air and in the outgoing filtered air for definite periods of time, counting the pollen grains that adhered to the vaselined slide in a definite area (1.8 sq. cm). The other method consisted of making counts of the pollen grains on the vaselined slides which had been exposed to the air outdoors and to the air in the room for definite periods of time. This is known as the settling count method.

It must be apparent at once that neither of these two methods gives an accurate index of the number of pollen grains per unit volume of air. What is most urgently needed is a simple method for the determination of the number of pollen grains in a unit volume of air, and until such a method is available, it will be impossible to determine with any degree of accuracy the efficiency of any apparatus for the filtration of pollen from the air.

In the summer of 1931 our filters (on the basis of daily counts on vaselined slides exposed to moving air) showed an efficiency of 97 per cent. In the experiments conducted in 1932 in the one room on the basis of the settling counts, the filters showed an efficiency of 98.2 per cent and the filters in the smaller ward showed an efficiency of 95.98 per cent.

Seventy-six patients with hay fever of the autumnal type and with positive skin tests to the ragweeds were observed for an aggregate of 299 nights during the pollen season of 1931 and 1932. These cases were observed for periods varying from three days to one week. They were admitted in the evening and remained in the filtered air for periods varying from 12 to 16 hours and were sent out during the day. The average time required for maximum relief of symptoms regardless of severity on entering the filtered air ward was 2.16 hours. On days when the pollen concentration of the air was high, a longer period of residence in filtered air was required for relief of symptoms.

In our series, 80.05 per cent of the patients had either great or complete relief of symptoms in three hours, or less and 4.85 per cent had no relief.

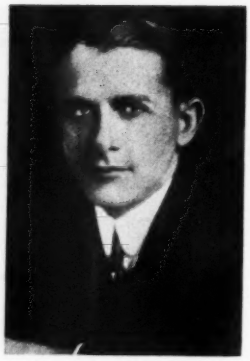
Symptoms reappeared upon exposure to pollen-laden air in an average time of 1.7 hours over the entire period of 10 weeks, 5 weeks in each season. In each season,

(Continued on Page 107)

***1.—Air filtration of a high degree of efficiency, for the removal of pollen, will relieve symptoms of hay fever. 2.—Air filtration of a high degree of efficiency for the removal of pollen will relieve the symptoms of pollen asthma, but the time required for the relief of these symptoms is very much greater than that in the case of hay fever. 3.—The removal of pollen from air by filtration is in no sense a cure for either hay fever or pollen asthma. It merely removes the irritating material and is effective only as long as the patient is not exposed to this irritating material. Personal efficiency of hay fever patients can be increased by filtering the air in which they spend the nights because of the increased amount of restful sleep secured through these conditions***

# Air Conditioning, are Topics

J. Lawrence DeNeille,
St. Louis, elected president



J. H. Zink,
Baltimore, elected
vice-president

THE Heating, Piping and Air Conditioning Contractors National Association held its forty-fifth annual convention at the Ambassador Hotel in Atlantic City, N. J., May 22, 23, 24 and 25, with a good attendance, and it proved one of the best and most instructive conventions so far in the history of the organization.

Following the welcoming addresses, President Robert D. Williams delivered his address, in which he gave a detailed report of the activities of his office during the past year. He referred to the time he has spent in Washington, trying by every human means possible to devise, work out and perfect with the representatives of the National Recovery Administration a code of fair competition for this industry, that could pass the various departments operating and adjusting the details incidental to its formal approval by the President of the United States.

He also urged all members of the Association to "observe honestly and faithfully every detail of the Basic Code, which is now a law, combined with our own Chapter thereof when it is finally approved."

Secretary Fitts then explained a situation arising in Washington necessitating immediate action by the delegates. The National Housing bill is to come up before the senate and house committee on banking and currency this week. As this bill, if passed will create a further employment in the building trades, the convention dispatched a telegram to this committee in Washington urging that the bill be acted upon favorably.

Major Robt. N. Campbell read a paper on "The National Recovery Program" in place of Major Geo. Berry. As for the H. P. & A. C. Contractors' Code he said he was just as anxious to know when it would be approved, but it is in the committees hands and it is actively being worked on. He assured the members it would not be left to die. He then gave the convention a word picture of the workings of the code authorities outlining in detail the obstacles confronting them, the details to be taken care of etc. In conclusion he assured the convention of expeditious handling of their code and stated they may expect their code to be signed acceptable to them subject to the code and NRA requirements and subject to complete ratification.

Secretary Jos. C. Fitts read his report, which showed that the membership has been built up from the low point at the last convention to the highest point in the history of the Association. The report was accepted.

Stephen F. Voorhees, chairman of the Construction Code Authority, was the next speaker. His subject was "The Construction Code and Its Administration." Mr. Voorhees gave a detailed and lucid explation of Chapter One of the Code of Fair Competition for the Construction Industry, as it pertained to the Heating and Piping Industry. He gave some facts of importance stating this code is the largest that has been codified up to today. In normal times it is estimated this group does 10 billion dollars' worth of business, employs 3 to 4 million workers and there are approximately 150,000 employer units. It touches every part of the country and affects every citizen. There are 3 major groups as designated by code authorities—food, clothing and shelter.

Group picture of those in attendance at heating contractors' 45th Annual Convention

# Codes and Heating Sales as Heating Contractors Meet

The Construction Code falls under the shelter group. This group (shelter) is most important under the durable goods classification because it affects more people and has the greatest possibilities for recovery. It is composed of more skilled workers who in normal times are spenders of money.

Mr. Voorhees explained each section of every article in Chapter 1 of the Construction Code and explained the meaning and functions of each committee of importance to the convention, stressing particularly on that section pertaining to bids. He closed his address by lauding the work of Pres. Robert D. Williams.

### ELECTION OF OFFICERS

The election of officers resulted as follows:
President, J. Lawrence DeNeille, St. Louis, Mo.
Vice-President, John H. Zink, Baltimore, Md.
Treasurer, M. J. Chagnard, Louisville, Ky.

The convention amended its by-laws by waiving the 30 day notice on motion of W. Klie to increase the board of directors from 12 to 15 members in Article 9 Section 1 and from 4 to 5 directors in Article 9 Section 2 and 4 to 5 directors in Article 9 Section 3.

This was done as it was felt more geographical and increased representation will be more advantageous to the association in code work.

Board of directors elected as follows: Three-year term: J. Lawrence DeNeille, St. Louis; John H. Zink, Baltimore, Md.; M. J. Chagnard, Louisville, Ky.; Geo. H. Dickerson, Chicago; H. Merwin Porter, Minneapolis.

Two-year term: Ray L. Spitzley, Detroit; Justin A. Kiesling, Houston, Tex.; Thos. O'Callaghan, Boston; Elbert W. Tompkins, Albany, N. Y.; Geo. J. Stoer, Milwaukee, Wis.

One-year term: R. D. Williams, New York City; W. J. Klie, Cleveland; J. J. Nolan, Memphis; Curtiss N. Gilley, San Francisco; J. J. Wafer, Denver.

The report of the Resolutions Committee was read by Walter H. Oleson, secretary of the Boston Association, and all resolutions were adopted as read.

Dr. Agnew, secretary of the American Standards Association, addressed the convention briefly and said that its work is going forward in spite of the depression and that they are now taking over the work of the plumbing and heating codes from the Department of Commerce.

The report of Treasurer John H. Zink of Baltimore was very complete and comprehensive. Mr. Zink stated the cost of operation last year was the lowest in years and they are meeting expenses within the budget. He referred to the trying conditions during the past few years and urged members to pay dues promptly. The report was accepted.

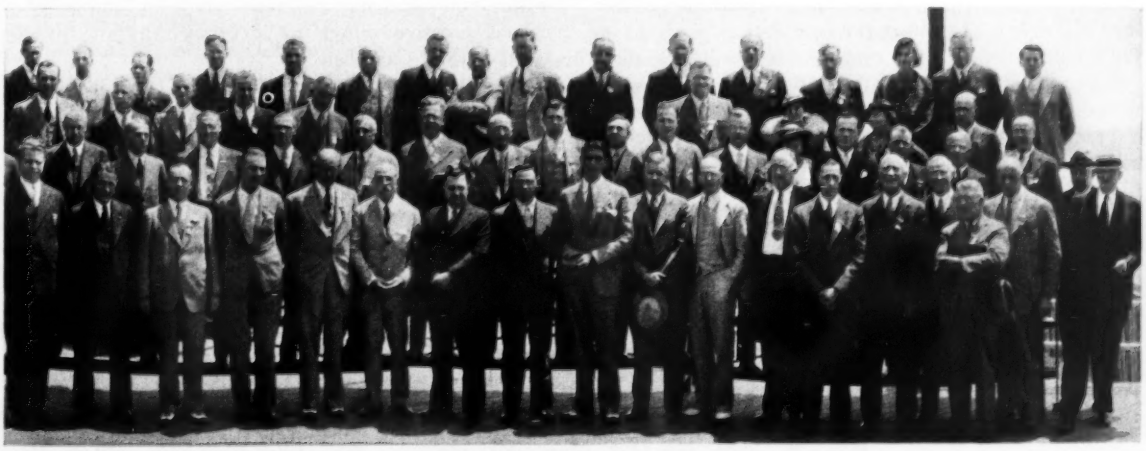
Harry M. Hart moved that this report be sent to all members because it contained a wealth of information along with many potent remarks. It was so ordered.

The report of the Committee on Standards was delivered by Geo. P. Nachman, chairman, and was accepted.

Prof. A. P. Kratz, University of Illinois, then gave an illustrated talk on "Radiators and Convectors." He said this work is carried on under the direction of Prof. A. C. Willard of the University of Illinois. His talk was given with stereopticon slides showing tests of cast iron radiation—regular and wall type, covered and uncovered and convector types of radiators.

### "AIR CONDITIONING IN 1934"

Willis H. Carrier, of Carrier Corporation, in his address on "Air Conditioning in 1934," said: "There are three aspects to this subject. First, the relation of the Heating and Piping Contractor with air conditioning in



1934 due to changing conditions. Second, the technical side which has three features:—a1, relation of air distribution and circulation which are vital factors; a2, importance of advances made in the industry, and a3, refrigeration, and third: Art and Practice of Air Conditioning. Mr. Carrier covered only the high spots of these subjects and illustrated some of his talk particularly the technical side by stereopticon slides. The members being primarily contractors he chose to talk on the third aspect, Art and Practice, first. He related how air conditioning at first was a highly engineered piece of work to suit the product in industry and then engineered specifications on air conditioning for comfort. Now the vast field for air conditioning for comfort is vastly different in that we know the engineering requirements as they are clearly defined and standardized. This field of air conditioning for comfort is the most active for real development of the art.

With use of slides Mr. Carrier showed and explained various installations of air conditioning systems and discussed the technical side of air circulation, cooling, heating, etc.

He then took up the subject of refrigeration and told of the types of refrigeration units of the early days down to the present time where development and science has produced efficient and economical refrigeration—the latter more than anything else being responsible for the rapid advancement of air conditioning and putting it within reach of the average man.

Robt. B. Miller, secretary of the N. Y. City Association, read a very excellent paper on "Prequalification of Bidders," in which he stressed the fact that codes of fair competition do not eliminate the need of qualifying contractors before they are permitted to bid on projects. He cited an example of prequalification procedure in connection with the recent awarding of contracts on a semi-public project in New York, which illustrated the wisdom of this procedure.

Prequalification does not in any sense restrict competition and the construction code contains a clause suggesting prequalification.

Russell G. Creviston, sales promotion manager of Crane Co., was next introduced and gave an interesting talk on present-day problems confronting the trade. His talk, based on code work, pointed out that the time devoted to this activity was negative for all of us in so far as actual business is concerned, particularly on the part of the manufacturers. He then talked about the product under the new deal. What the new deal is going to do with our product. He felt every product will have to be revamped and dressed up. Study of new materials is important. What effect will all this have on operating costs. He then went into the subject of selling effort. He felt that this will be on a higher plane and was of the opinion that no group can profit more than this industry under the new deal.

States have set up housing authorities of men not directly connected with the building industry. He urged all to follow their work and guide them. The government is getting deeper and deeper into housing work and putting 30 to 40 milions of dollars into this. He said that 40 to 50 million people are living in deplorable conditions, and that the need for this work is urgent.

He also told of the work of the Home Owners Loan Corporation and how it is set up and administered.

"Selling Modernization in 1934" was the subject of an address by John L. Campbell, assistant sales manager of the American Radiator Co. Mr. Campbell stated that this subject has been discussed and written about many, many times yet it is a very important and potent thing today.

He cited statistics on the number of homes in need of repairs and those going the way of demolition. He told of the increasing purchasing power and that the consumer being more sure of his job is more receptive. Other industries are out after the consumer dollar and as money gets easier the consumer will find there isn't sufficient money to buy two major products, so it is up to us to see that our industry obtains theirs.

He stated the consumer is buying, but not heating products, as is evidenced by other industries showing increases in business. He felt that other industries are becoming keener competition for our field and cited as an example the competition of candy vs. cigarettes—the drug store vs. the restaurant. All in this heating business will go up or down together. From the manufacturers side all are vitally interested in the contractors side and felt this was a real opportunity because if they do not get this modernization work this year, we will never get it. New heating jobs are too few to go around. He spoke of creative selling and urged the contractors to make a complete revision of their territories as conditions are changing rapidly, and the man who was unable to buy a new boiler last year may be in a position to do so now. Selling arguments which didn't work a year ago may work today and Mr. Campbell urged the members to try again. He said we are being outsold by other industries. He presented a chart prepared by American Radiator Co., the result of a survey made in 10 or 12 cities in the country, proving conclusively that 64% of the homes in these cities surveyed are heated by stoves.

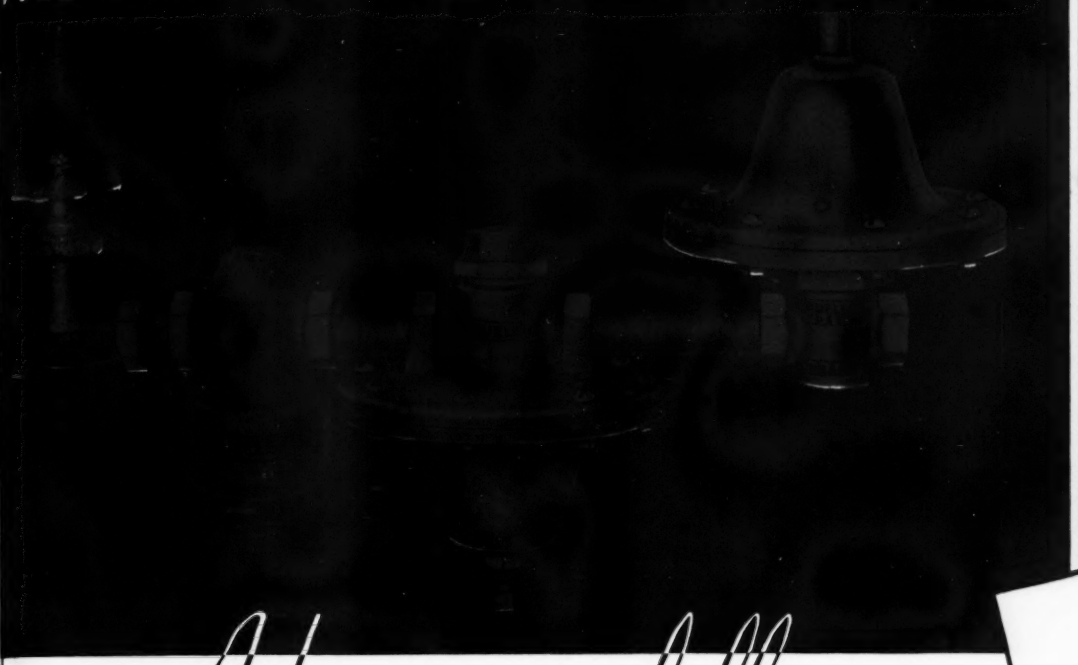
E. L. Sylvester, sales manager, Delco Appliance Corp., then addressed the convention—his subject being "The Heating Contractor and the Merchandising of Automatic Heating Equipment"—stressed the fact that the last year has shown a decided change in the heating contractor in his relation to selling automatic heating devices. Because of his basic knowledge of heating and his understanding of heating devices he is particularly desirable as a dealer.

Mr. Sylvester felt that automatic heating is a specialty selling job requiring a different type of selling in that it was creative selling as mentioned by the previous speaker, Mr. Campbell.

H. M. Hart brought up the subject of proper location of thermostats in homes on automatic heating devices stating this was being neglected by many dealers who place these control devices in any convenient spot regardless of practicability and it is of the utmost importance in proper control. He told Mr. Sylvester of the study made and discussed by Mr. Kratz on the floor in the session on the previous day, regarding this subject wherein the results show the trend of locating thermostats lower in the homes—about 30 inches above the floor.

The ladies were entertained at a tea given by Crane Co. on the solarium of its board walk exhibit building, in charge of R. B. Scull.

# The DEPENDABLE MUELLER SYSTEM



## A few more dollars ... but A LOT MORE SATISFACTION

HOW swiftly the scene changes! The radical idea of yesterday is the conservative idea of today. The idea of eliminating the expansion tank from hot water heating systems is accepted practice today, but it was frowned upon as new and radical when Mueller Company "sprung" it fifteen years ago.

Many heating engineers and contractors then flatly refused to adopt it. Their caution was prompted by sound reasoning. "Wait," they said, "until it proves its case!"

They waited . . . and they saw! Mueller Company had realized from the outset that they were asking the heating field to stake the satisfaction of an entire heating system upon the dependability of a relief and reducing unit. With characteristic Mueller thoroughness, they had designed a unit that met this responsibility squarely. The first Mueller control was built right, and every Mueller System built since has played its part in building up the confidence that has made this type of control standard practice today.

Facts do not change — only the ideas regarding them change. If there was once a need for caution in selecting a system of this type, there is *still* a need for caution.

Since Mueller Company pioneered this idea, many devices for performing a similar service have been developed. But only one —the Mueller System—has behind it the undisputed proof of thousands of service-years.

More significant, still, is the fact that the Mueller System remains essentially as it was designed at the outset. Many minor refinements have been made, but the basic principles as outlined opposite have withstood the challenge of time.

What is it *worth* to be *certain*? That is the question you should ask yourself when installing a hot water heating system control. It is also the question that you should ask the boiler owner.

Surely the answer is that it is worth the slightly higher price of Mueller quality and dependability.

**MUELLER CO., Decatur, Illinois**

*Branches in Principal Cities*

*Factories: Decatur, Ill., Chattanooga, Tenn., Los Angeles, Calif., Sarnia, Ont.*

# MUELLER SYSTEM

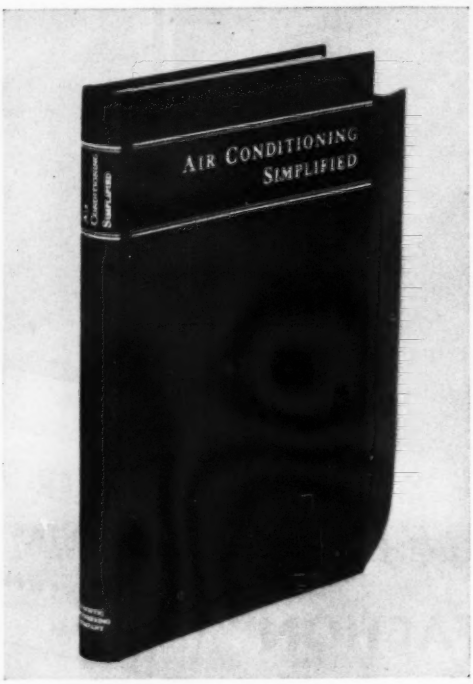
FOR AUTOMATIC REGULATION OF HOT WATER HEATING

... only the MUELLER SYSTEM combines these features ★

1. All working parts *and all exposed parts are* Mueller Bronze. No rubber diaphragms.
2. No close fitting parts which cause seizing or binding when corroded.
3. All valves operated by larger diaphragms, assuring sensitive, accurate operation.
4. All water passages free and open.
5. Seatage material of specially prepared composition, heat treated stock.
6. All valves protected by bronze screening element.
7. Relief valves conform with A.S.M.E. boiler construction code and are approved by the National Association of Fire Underwriters.

For coal fired boilers use Mueller H-9500 Heating System with damper control. For gas or oil fired plants or with room thermostat control, use Mueller H-9500 Heating System less damper control.

# AIR CONDITIONING SIMPLIFIED




★

*A brand new book containing information every man should know about air conditioning.*

★

AIR CONDITIONING SIMPLIFIED, as its name implies, is a simple, easily understood book that takes the mystery out of air conditioning—it tells what it is—how it works—how it is installed —and how it is sold!

This new book, off the press April 10th, has back of it three years of planning and preparation. It is divided into three main parts.

The first part, covering the theory of air conditioning, gives a simple but thorough explanation of the mechanical end of an air conditioning system. It contains facts from the pens of the best authorities in the country—men like Samuel R. Lewis, Walter L. Fleisher, A. M. Daniels and over fifteen others. It has all been compiled and edited by the well known heating authority, Harold A. Alt.

Part two describes in detail a number of actual installations, including floor plans, working drawings, detailed drawings of equipment, etc. There is no theory here—just plain examples of what has been done, the cost, etc.

The answer to the question "Can Air Conditioning Be Sold?" is well illustrated in the third part. Here you see just how air conditioning is being sold. Other contractors are selling it and here you will find out how they go about it.

We recommend this book with the utmost confidence that it will give you an entirely new slant on air conditioning. Go through its pages. Find out for yourself why we recommend it as the best book to meet the needs of the air conditioning industry of today.

The book, for the time being, is priced exceptionally low at $1.00. This $1.00 is based on "depression" priced printing, paper and binding. But now "depression" is over. Paper, printing, engraving and binding have skyrocketed, sending costs high in the air. When the first edition is exhausted the price of $1.00 will undoubtedly have to be raised.

So fill in the coupon below. Pin your check for $1.00 to it and mail it today. Money back if you are not completely satisfied.

## CAN YOU ANSWER THESE QUESTIONS?

In figuring cooling, how much radiant energy from the summer is absorbed by window glass?
To what extent will awnings reduce the cooling load for a home?
How can the cost of cooling be figured on the degree-day basis?
How can a home be dehumidified and cooled using gas heat?
How much does it cost to air condition a home in both summer and winter?
How should you go about cooling a residence using ice?
Do you know how to design ducts for air conditioning?
How can Noise be eliminated?
What is steam jet refrigeration for air conditioning?

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Ice Cooling in Assembly Room and in Residence.
Year-round Air Conditioning in Baltimore Bank Quarters.
Air Conditioning in a High Class Residence.
Selling Air Conditioning and How It Is Done.
Selecting and Teaching Sales Prospects About Air Conditioning.

DOMESTIC ENGINEERING CO.
1900 Prairie Avenue,
Chicago, Illinois.

J

Please send me one copy of AIR CONDITIONING SIMPLIFIED for which I enclose $1.00. I am to have the privilege of returning this book if it is not what it is claimed to be.

Name .....

Address .....

City and State .....

# Automatic Heat and Air Conditioning Questions

### TEMPERATURE OF SUPERHEATED STEAM

To the Editor:

What is the temperature of superheated steam at 10 lb. per sq. in. pressure? R. M.
Illinois

To the Reader:

In order to answer this, it is necessary to consider the definition of superheated steam. Kent's Mechanical Engineer's Handbook defines superheated steam as steam heated to a temperature above that due to its pressure.

Also, this same authority defines saturated steam as steam of the temperature due to its pressure—not superheated.

In other words, in the case of superheated steam, the steam is heated to a temperature above that which is required for the pressure under consideration when dealing with saturated steam. For instance, steam tables show that at 25 lb. per sq. in. absolute pressure, or approximately 10 lbs. per sq. in. gauge pressure, the saturated steam temperature is 240.07 deg. Fahr. If you have 19.93 deg. of superheat, then the temperature of the steam at this pressure is 260 deg. Fahr. Likewise, 39.93 deg. of superheat at this pressure gives a steam temperature of 280 deg. Fahr.

### WHAT IS HOT WATER HEATING FACTOR?

To the Editor:

In your new book, "Oil Burner Heating," you show a short way to figure room radiation for steam heat, and state that 240 is the factor used for steam. What is the factor for hot water? P. C.
Wisconsin.

To the Reader:

In figuring room radiation, when it is said that the factor used for steam heating is 240, this means that 240 Btu are given off per hour for each square foot of rated cast iron radiation when the temperature in the room is 70 deg. Fahr. and the temperature of the steam in the radiator is 212 deg. Fahr. In hot water heating, the temperature of the heating medium, namely the water circulating through the system, is at a much lower degree than in steam heating. The average temperature of the water in a hot water radiator is considered to be 170 degrees. With this temperature in the hot water radiator and with a room temperature of 70 deg. Fahr. it is considered that the average cast iron radiator gives off 150 Btu. per hour for each square foot of its rated radiating surface.

As pointed out in the book to which you refer, if you figure the heat lost through the walls, windows, ceiling, and floor in terms of Btu. you must divide this number by 150 in the case of hot water radiation, or by 240 in the case of steam radiation in order to find how many square feet of the respective types of radiation are necessary in order to take care of the heat loss in question.

For instance, if you have a room which figures out to have a heat loss of 15,000 Btu. per hour and if you want to find the number of square feet of hot water radiation required to offset this heat loss, divide 15,000 by 150 and the result is 100 square feet of hot water radiation. If steam radiation is considered, divide the 15,000 by 240, and the result is 63 sq. ft. of steam radiation.

### ANOTHER HARTFORD LOOP QUESTION

To the Editor:

In your December issue on page 20 is an article by Harold L. Alt entitled, "What Is the Hartford Loop?" that is of great interest to me because I have rebuilt a steam heating system for a block of seven stores which are heated by two boilers located in a boiler house across the alley in the rear of the block. This work had nothing to do with the boiler plant but now I have been asked if any change could be made in the boiler plant so that the water line in the two boilers would stand level at all times, even though one boiler happened to be fired harder than the other.

Enclosed is a drawing, Fig. 1, with a Hartford Return Loop as I have worked it out and I would like to be sure I am right before I offer any suggestions. The steam piping is just as I have shown it except that there are now no reducing tees for the balance pipe on the top and these will have to be cut in; I am not showing the present return connections but am indicating how the loop would be installed. All the return water enters a small receiver, just below the boiler house floor and is returned to the boilers by an electric pump through a 2-in. line. While I have marked the vertical pipes in the loop 2-in., I believe 2½-in. would be small enough; the tees to be cut into the boiler steam pipe can be any size desired. What do you suggest? W. E. H.
Michigan.

To the Reader:

There is nothing wrong with the sketch submitted

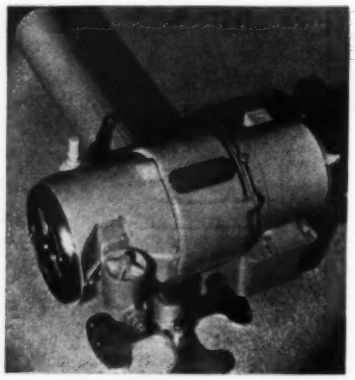
(Continued on Page 111)

# Products FOR Dealers

*This section gives a report of the latest news of selected automatic heat and air conditioning products. The general new products section starts on page one hundred fifty.*

### A Pressure Atomizing Type Conversion Burner

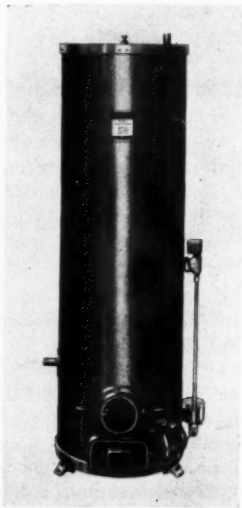
The pressure atomizing type conversion burner shown in the accompanying illustration has just been added to an existing line of oil burner cooking ranges, bake ovens, water heaters, circulating heaters, boiler-burner units and other oil burning utilities. It is finished in one model which has been designed to be flexible enough to meet all domestic heating plant requirements. Features of this burner include aluminum castings, a built-in silencer, a radio interference eliminator and provisions for ease of installation. This burner is designed to operate on Number 3 oil with a capacity of 1.35 gal. to 4 gal. per hour. It employs a 1/6 h. p. direct drive motor with a new type



transformer, a new model pump, a pressure relief valve and strainer, a draft regulator, and interchangeable nozzles. Controls are optional. The Heater Division of the Motor Wheel Corporation, of Lansing, Mich. is the manufacturer.

### Water Heater Burns Oil

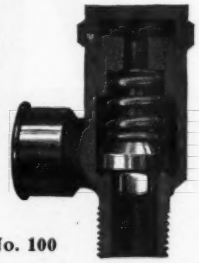
This oil burning water heater has been designed to have a mechanical draft. However, where electricity is not available, this equipment can be supplied to operate on natural draft (without an electric motor) with a heating rate of 15 gal. per hour (400 gal. per day). In addition, it is designed to operate for from a week to ten days without any trouble in the event the electric current is off. The combined vent elbow and draft device is cast in one unit and is built as a part of the heater. This is concealed in the top of the equipment and is made to regulate the draft automatically without further adjustment. Temperature control is regulated by turning a small disc. The mechanical forced draft is supplied by a specially designed motor and blower. This motor automatically cuts off when the heater is operating on either semi-pilot or pilot rate. Number two oil is the fuel which this unit is made to burn. However, it is designed to operate also on Number 1 distillate or kerosene. The heat rate with dependable draft is listed as 30 gal. per hour or 720 gal. per day. The water connections are 1-in.



and the stack connection is 6-in. The overall height of the equipment is 58¾ in. while the diameter is 60 in. Piatt Products Corporation, 306 Clinton St., Lansing, Mich. is the manufacturer.

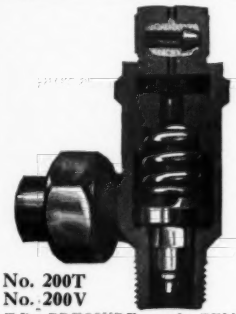
### A Heating and Cooling Unit

The accompanying illustration shows an air conditioning unit designed to be independent and self-contained. Also, it is described as requiring no connections to the water main or drain for cooling or condensate disposal, may be located in any room and needs only to be plugged into a power outlet. In summer, it operates to supply fresh air, to filter it, to circulate it and to withdraw stale air and to revitalize it with fresh conditioned air. The



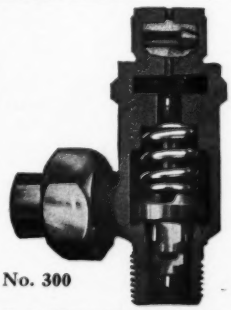
**No. 100**

T-D PRESSURE RELIEF VALVE. For Air, Water and Oil.



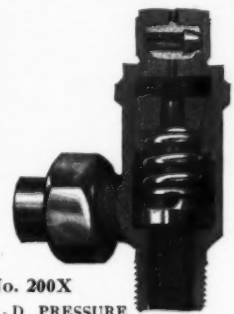
**No. 200T**
**No. 200V**

T-D PRESSURE and TEMPERATURE VALVES.
200T, Pressure and Temperature.
200V, Pressure and Vacuum



**No. 300**

T-D PRESSURE-TEMPERATURE-VACUUM VALVE. Pressure, Temperature and Vacuum.



**No. 200X**

T-D PRESSURE and TEMPERATURE VALVE (with extension) Pressure and Temperature, with extension.

# The PROFIT PENDULUM *Swings to* SAFETY

★

PROPERTY owners in ever-increasing numbers are demanding boiler installations which will assure them *absolute safety* . . . they are demanding *positive protection* against explosion due to overheating, collapse due to vacuum and bursting due to excessive pressure. Because they provide these essentials to boiler *safety* and boiler *dependability,* T-D Valves are finding a wide acceptance among property owners everywhere. They are fast learning that to buy T-D Valves is to buy *safety* and this knowledge is developing many added profits for heating men. The T-D line is complete. There is a T-D Valve which will *dependably* meet every boiler requirement. Get in touch with us immediately for all of the important details. Get in on the swing to SAFETY *now.*

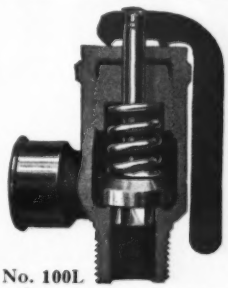
★

## Introducing the No. 400 Hydro-Thermo Automatic

It is not necessary to disconnect piping to replace, repair or renew parts which operate valve. A long extension extends into water and is filled with an expanding liquid. As boiler water heats fluid in bellows and tube, bellows expand. With every degree of heat, bellows expand against compression screw, which is sealed at 200°, pushing seat downward, discharging extreme hot water. As cold water displaces discharged hot water, temperature reaches safety point, closing valve. A fuse, provided to safeguard against carelessness, melts at operating point. Bellows located outside of water area are immune to rust and sediment. Pressure valve with outside adjustments is provided. Vacuum feature prevents collapse. A temperature release, a pressure release, a vacuum breaker, positively preventing explosion, collapse and bursting. Furnished with tripping lever if required.

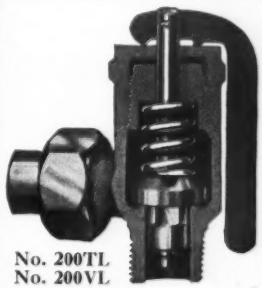
★ Always remember . . . "the boiler is as dependable as its safety valve." ★

**T-D SPECIALTY CORP.**
**300 RUTHERFORD AVENUE, BOSTON, MASS.**



**No. 100L**

T-D PRESSURE RELIEF VALVE. For Air, Water and Oil—with lever.



**No. 200TL**
**No. 200VL**

T-D PRESSURE and TEMPERATURE VALVES.
200TL, Pressure and Temperature with lever.
200VL, Pressure and Vacuum —with lever.

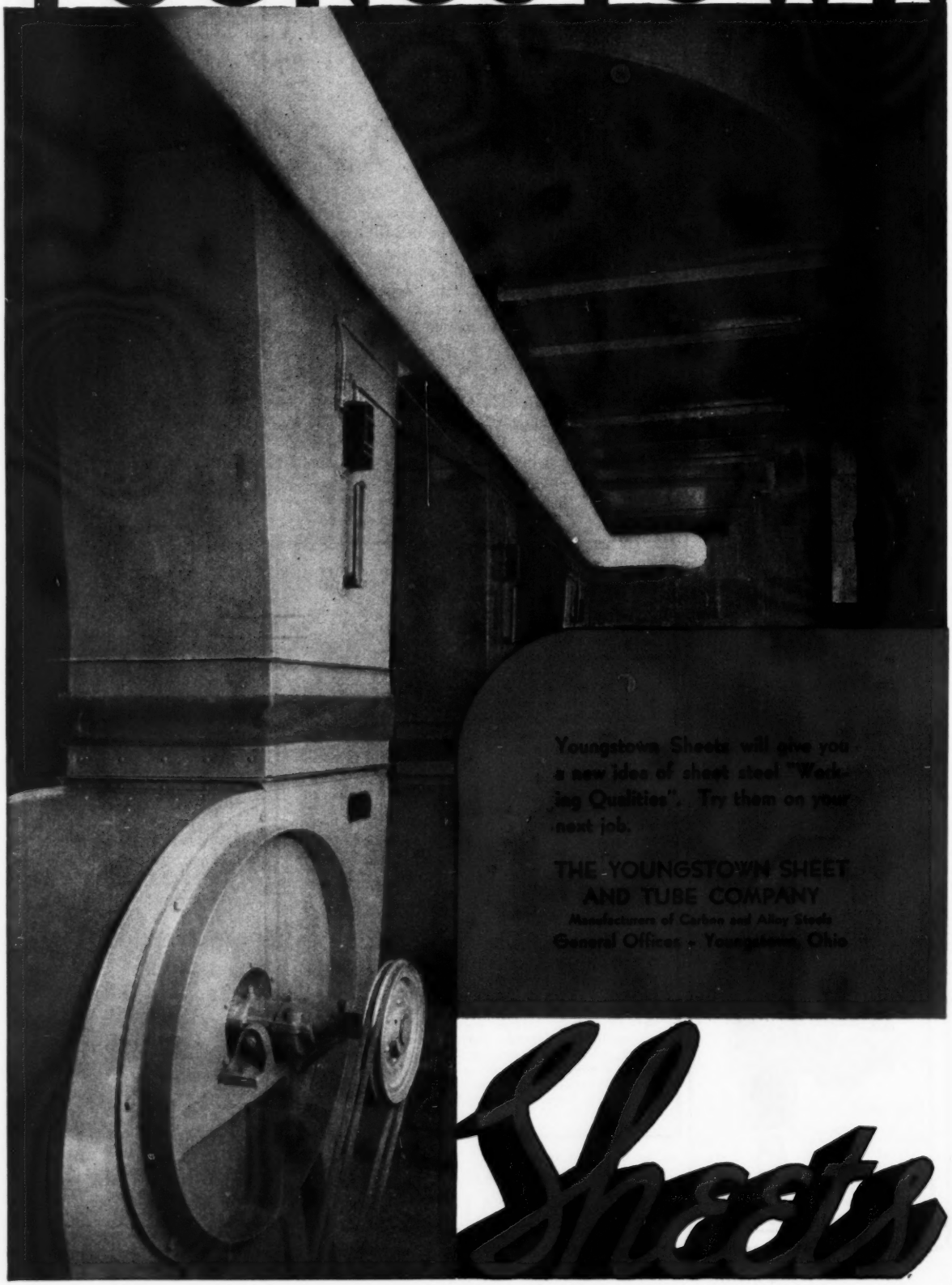
**No. 300L**

T-D PRESSURE-TEMPERATURE-VACUUM VALVE. Pressure, Temperature and Vacuum—with lever.

**No. 200XL**

T-D PRESSURE and TEMPERATURE VALVE (with extension) Pressure and Temperature, with extension and lever.

# YOUNGSTOWN



Youngstown Sheets will give you a new idea of sheet steel "Working Qualities". Try them on your next job.

THE YOUNGSTOWN SHEET AND TUBE COMPANY
Manufacturers of Carbon and Alloy Steels
General Offices - Youngstown, Ohio

Sheets

same mechanism is designed to be used as a heating unit by the turning of a handle which reverses the refrigerating cycle and causes the device to operate as a heat pump. For winter use in cold climates, it is used either as an auxiliary source of heat or it may be connected with the regular heating system. In other words, this unit has been developed as an air conditioning application of the reversed refrigeration cycle. Also it has been introduced as an air-cooled unit air conditioner mechanism which disposes of its own condensate. In cool weather when humidity is low, this conditioner is made to extract moisture from the large volume of outside air run through the unit and adds this moisture to the smaller volume of fresh warm air supplied to the room. In summer, when humidity is too high, the unit condenses excess moisture out of the room air and blows it out of doors. To match the furnishings of a particular room, the equipment is offered in various styles of either

wood or steel cabinets. Two fans direct connected to a ¼ h. p. motor are included. The unit operates on 220 volt alternating current, 1½ to 2½ K. W., according to outside temperature. As for rating, one unit in a room of approximately 5000 cu. ft. (20 ft. x 25 ft. x 10 ft. ceiling) is capable of effecting a reduction of temperature of from 10 to 15 deg. Fahr. with an equivalent reduction in relative humidity when used as a cooling unit, or, conversely will raise both temperature and relative humidity when used as a heater. Multiple units may be installed to conform to the size and conditions of the space to be treated. Each unit is made to circulate 600 cu. ft. of room air per minute. The refrigerating capacity is listed as 1½ tons per 24 hours, or 18,000 B.t.u. per hour. The De La Vergne Engine Co. of Philadelphia, Pa. has placed this unit on the market.

### Electric Temperature Control Valves

This electric temperature control valve has been placed on the market as being applicable in all new or existing buildings utilizing one- or two-pipe heating systems. It is for exposed or concealed radiators and unit heaters and is for the control of individual rooms, zones or entire

ACROSS THE SEAS

OR HERE AT HOME

Century Motors have an international reputation. "They keep a-running" in all parts of the world, in all classes of service, in damp, humid climates or where temperatures cover an extreme high-to-low range...They are available in a wide variety of types and sizes — designed and built right to meet every operating condition...Sizes, 1/200 to 600 horse power... Century Engineers will gladly assist you in selecting the right motor for the application.

CENTURY ELECTRIC COMPANY
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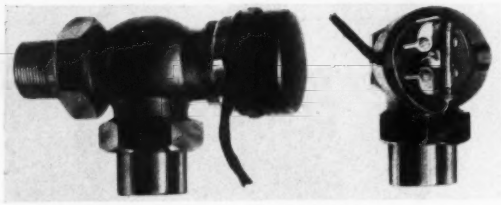
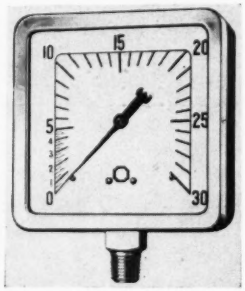
Offices and Stock Points in Principal Cities

Century MOTORS

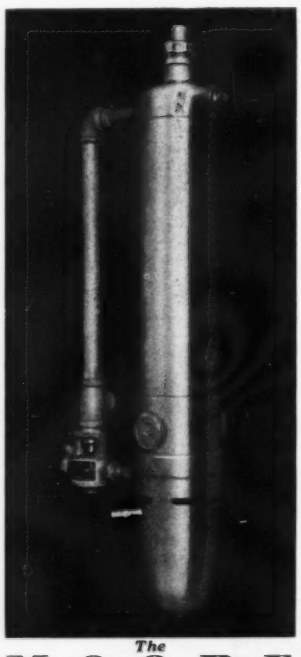
buildings. In operation this controlling unit functions as follows: a thermostat is set for the temperature desired in the room or building zone to be controlled. When the air surrounding the sensitive thermostat member reaches the maximum temperature for which it is set, the thermostat moves to close a switch which sends a low voltage current through the resistance element in each control valve in the circuit causing them to close until the thermostat again calls for heat. This action is described as being entirely automatic. The heat meter consists of a tiny metal bulb which contains a volatile liquid which, when warmed by a low voltage electric current passing through the resistance coil which surrounds it, vaporizes, thus producing pressure within the actuating bellows in the valve body to operate the valve. If there are several radiators in a room or a section in the building, they can be regulated by the temperature at one central point. Only one thermostat need be used to control several valves. The valve illustrated here has an angle type body and is offered in sizes of ½-in. to 1½-in. inclusive. This valve is suitable for direct connection to radiators. Another model of this valve has a globe type body and is furnished in sizes from ½-in. to 4-in. inclusive. The smaller sizes are designed for direct connection to radiators and the larger sizes for zone control, unit heater regulation, or where a larger valve size is required. A transformer is used to reduce the domestic electric supply down to the valve operating potential of 20 volts. Fulton Sylphon Co., located at Knoxville, Tennessee, is the manufacturer.






### A New Line of Gauges

Announcement has just been made of a new line of gauges mounted in a modern square case design. These instruments which are available in a wide variety of pressure applications and constructions, are made in one

The MOORE
*Low In-Put*
GAS WATER HEATER

# Tune In *with today's* Buying Demands

★

*The Moore heater converts the Old Job into a highly efficient automatic storage system*

★

*Not only is the MOORE HEATER economical to operate, it is also attractive in appearance*

★

BY RECOMMENDING the installation of MOORE *Low In-Put* HEATERS to their customers, profit-minded heating men, the country over, are tuning in with today's greatest water heater demands. An absolutely reliable, fully automatic side-arm unit which meets the demand for an *efficient* and *economical* hot water supply.

Because most heating plants are now shut down for the season, hot water supply is a real live topic among many of your prospects. The MOORE *Low In-Put* HEATER will appeal to them from every standpoint. It remains for you to simply stress its dominant features—

★ It gives the advantages of automatic hot water at a very low operating cost.
★ Is readily and easily installed—
Is also quiet in operation.
★ Saves the cost of a whole New System

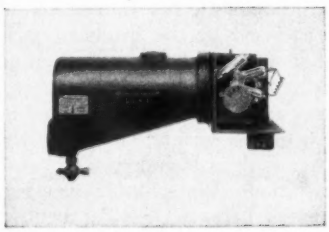
Tune in with today's buying demands and register with MOORE profits.

J. W. MOORE VALVE CORP.
EVERETT MASS.

size having a 3½-in. dial. They can be supplied with a dial reading in pressure, vacuum, feet of water, or any other of a wide variety of pressure readings. Also, they are available in standard low pressure steam graduations, as well as in a combination instrument in which the temperature, pressure, and feet of water are shown on the same dial for application to domestic hot water systems. The instruments can be supplied with lower connection for mounting directly in the top of the apparatus or with rear connection for application to the side or front of the apparatus. Also, they can be supplied for flush mounting inside of the jacket. A wide variety of finishes are available. Jas. P. March Corporation, located at 2073 Southport Ave., Chicago, Ill. is the manufacturer.

### New Water Level Control

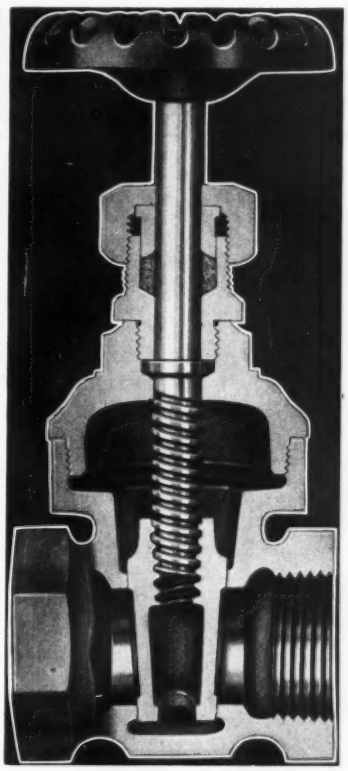
The accompanying illustration shows a control unit which just recently has been placed on the market for protecting the water level in any automatically fired boiler. The unit comes in two models, the illustration representing the one which has triple features. These include a low water cutout, a feeder and a pressure control combination. The other model has a double function consisting of a low water cutout and feeder provisions. Both are of the same size, shape and construction with the exception that a switch to control the pressure is added to the former unit. The equipment is finished in black crackled leather. It is installed on the water glass mounting. The feeder valve is of the snap-action electric type designed to prevent a sluggish motion. The low



water cutout guards the boiler if the pressure should be off. A strainer for the water is furnished to be installed in the water line ahead of the feed. The feeder requires 110 volts. The valve is of the magnetic type. The unit handles burner circuits of either high or low voltage and is made to be used on either two or three wired single circuits for steam or vapor systems. It is designed for a maximum pressure of 7 lb. Differential, one lb. Newark Boiler Regulator Company, of 418 Glenwood Ave., East Orange, N. J., is the manufacturer.

### A Boiler for Oil Burners

The accompanying illustration shows an oil burning boiler which just recently has been placed on the market.

THE IMPROVED
"MILWAUKEE"
125-lb. S. W. P., Solid Wedge, Non-Rising Stem
GATE VALVE
SCIENTIFICALLY DESIGNED, ACCURATELY MACHINED, BEAUTIFULLY FINISHED
ENGINEERED BY "MILWAUKEE"

Made of the Highest Grade Steam Bronze from virgin ingot metal and embodies these essential features:—

1—Strong, attractively designed, ventilated, non-heating Hand Wheel. 2—The long sturdy Stem provides excess strength and insures positive operation. 3—The strong, highly polished Bonnet adds a finer finished appearance to the valve. 4—The solid wedge Disc is designed to prevent wear and contacts seating surfaces only at point of closing. 5—Stuffing Nut is sufficiently heavy to withstand severe service strains. 6—A deep Gland Follower is provided in the Stuffing Box. 7—The best grade of graphited asbestos Packing is used. 8—Excess strength, where strength is needed, is provided by the heavy hexes and sturdy body design. 9—Valve may be repacked under pressure when wide open.

SOLD EXCLUSIVELY BY LEADING RECOGNIZED JOBBERS

MILWAUKEE VALVE COMPANY
MILWAUKEE WISCONSIN

Manufacturers of
"Milwaukee" Heating Specialties
"Approved" Bronze Valves
"Milwaukee" Valves and Fittings for the Oil Industry

# THIS RANGE BOILER IS SURE TIME-TESTED

*. . . it's the kind your customers will want to buy this year*

Not long ago No. 65 on the long list of Brown & Brothers Seamless Drawn Copper Range Boilers was returned to our shop for a little repair work.

Since 145,553 of these serviceable boilers have been installed to date, it would place the installation of No. 65 back in the late 70's when these boilers were first placed on the market.

If the boiler of that day can last so long and give such satisfactory, non-rusting service, think of the possibilities with the Brown & Brothers Seamless Drawn Boiler of today with its improvements—purer, deoxidized copper tin-coated throughout on the inside; better manufacturing methods; ingenious spud connections; higher test strength.

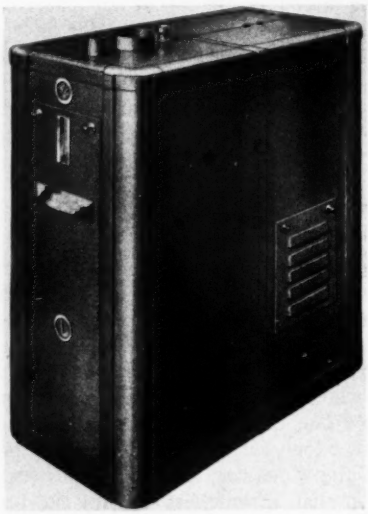
Get all the facts first. Then make a drive this summer on this *time-tested* copper range boiler. You can make good money.

**E. B. BADGER & SONS CO.**

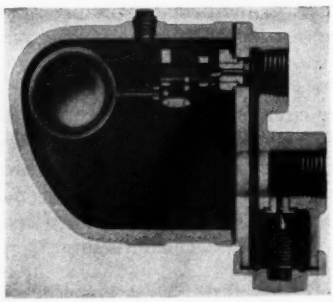
75 PITTS STREET BOSTON

271 MADISON AVE. NEW YORK, N. Y.


It consists of what is described as several generators designed to hold a small quantity of water for quick steaming. These are enclosed in and connected to an outer water jacket or preheating boiler that holds a large quantity of water designed to cool slowly. This boiler has been made to be equally applicable to hot water systems.



The jacket is insulated and features for easy cleaning are provided. In addition, provisions are made for cleaning the inside of the generators if desired. The design allows the installing and servicing of a gun type burner under the domestic hot water tank, all of which is completely enclosed by the insulated jacket. Where the domestic hot water tank is not desired and where it is desirable to expose the burner, a smaller jacket may be used. Rotary type burners can be fitted into the base of the boiler with the smaller jacket or where the domestic hot water tank is included, they can be installed in the larger jacket. Waterfilm Boilers, Inc. at 154 Ogden Ave., Jersey City, N. J. is the manufacturer.



### Combination Float and Thermostatic Trap

The trap illustrated here is announced as the latest addition to a line of steam traps. It carries the working pressure for which this type is now available to 180 lb.

per sq. in. The trap is designed to be compact and light in weight so that it can be supported directly on the piping. Inlet and outlet are on the same side, a small vertical distance apart for easy connection to horizontal pipes. All working parts are on the cover and can be exposed for cleaning by simply removing the trap body without disturbing the connections. An automatic air by-pass is arranged on the down-board side of the trap, for the purpose of preventing the thermostatic element from being exposed at any time to the full steam pressure. It is designed to keep the trap vented at all times so that it cannot become air bound. The main discharge valve and seat are of stainless steel. The manufacturer is Sarco Company, Inc., located at 183 Madison Ave. New York City.

## Living Room—

(Continued from Page 83)

of in the *sun effect* which will be treated in a later article. Also a list of coefficients for common constructions will be included.)

To turn this into tonnage capacity of the refrigeration machine it is necessary to divide by the Btu. equivalent of one ton of refrigeration at the hourly rate (as the Btu. transmission is calculated on an hourly basis) which means dividing the transmission by 12,000 Btu. or Refrigeration equals 2,737 Btu./12,000 Btu. or 0.22 tons. so that, if a ¾-ton machine were installed there would be a balance of 0.75 tons—0.22 tons or 0.53 tons for sun effect, body heat, leakage and dehumidifying, of which more will be said in a later article.

This, however, is based on keeping the room only 10 degrees below the outside temperature, whereas the usual temperature difference considered is about 15 degrees. As 15 degrees is 50 percent more than 10 degrees all of the heat transmission will be increased 50 percent, if the room is kept 15 degrees below the outside, making the total transmission of heat 2,737 Btu. 150 percent or 4,106 Btu. Changing this to tons of refrigeration will show a requirement of 4,106/12,000 or 0.34 tons, and this on a ¾-ton machine will leave 0.75—0.34 or 0.41 tons for sun effect, body heat and dehumidifying.

The next problem to be considered will be the conditioning of a room in a hospital.

## Hay Fever—

(Continued from Page 93)

on those days when the pollen counts were high, symptoms would reappear within 5 minutes after exposure in a large percentage of our patients. Although the symptoms upon re-exposure were in many instances of severe degree, it was the consensus of opinion that personal efficiency was increased because of relief from pollen irritation.

Twenty-one pollen asthma patients were studied during August and September, 1931. The majority were observed for periods of 4 to 7 days during which they were confined strictly in filtered air. The asthma became less severe after twenty-four hours of confinement in


Mail the Coupon

HERE'S A GREAT PROPOSITION

The beautiful new Ideal Fluid Heat Oil Burning Boiler.



Fluid Heat Rotary Wall Flame Burner for conversion jobs.

for THE HEATING CONTRACTOR who is thinking about going into the Oil Burner business.

for THE "GUN" BURNER DEALER who is thinking about selling Rotary Burners, too.

FLUID HEAT dealers' sales are increasing—through hot leads and enthusiastic recommendations from satisfied users. Fluid Heat dealers' profits are protected—by amazing freedom from service calls. And we've got a real dealer proposition and a real sales plan that will make real money for you. Some choice territories still open. Mail the coupon at once for full details.

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FLUID HEAT DIVISION, ANCHOR POST FENCE CO.
6806 Eastern Avenue, Baltimore, Md.

I'm interested. Please send full details of your Dealer Proposition on Fluid Heat.

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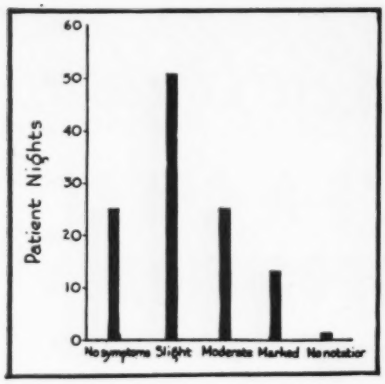



Fig. 1—Above: Intensity of hay fever symptoms observed after a night spent in the filtered-air room, based on 115 nights

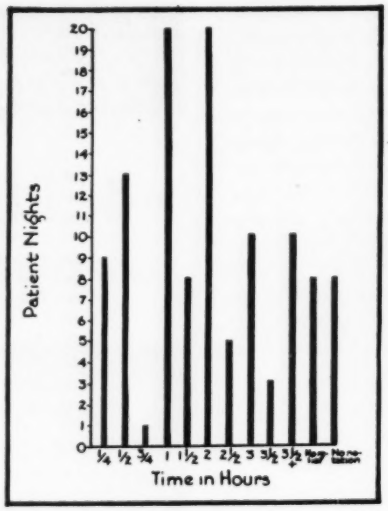



Fig. 2—Center: Time required for maximum relief based on 115 patient nights

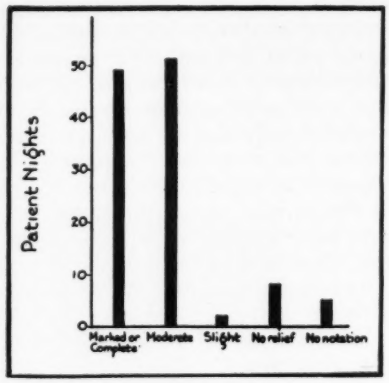



Fig. 3—Above: Relief obtained on entering filtered-air room based on 115 patient nights

all except two patients. These required 4 days before experiencing relief. The objective findings of wheezing cleared in only two patients, one after three days, the other after five days of observation. Four of the patients who were completely free of subjective symptoms, but who still had slight wheezing on examination, developed asthma one-half to one hour after leaving the ward.

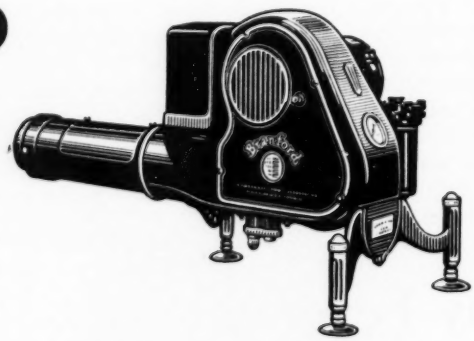
Thirty-five untreated pollen-asthma patients were studied during the 1932 season. The subjective symptoms were relieved after a variable number of days of confinement depending upon the severity of the asthma.

*An acknowledged leader in Beauty, Stamina, Economy*

THE
**BRANFORD**
**OIL BURNER**

Branford leadership is the direct result of its remarkable performance. Only a burner built to the standards of a Branford could approach its enviable record of service without shutdowns or repairs. Proved in thousands of installations during the past ten years, Branford continues to forge ahead. Experienced dealers who have seen the new models and the excellent selling materials offered, express their complete approval with substantial orders.

If you want profits—with satisfied owners—you want the Branford Franchise. Complete information promptly given—write today.




The Branford Oil Burner is unrivalled in beauty and compact design. It uses no extra shields or sheet iron boxes. Built in sizes ranging from 1¼ gallons to 20 gallons per hour.

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*Serving the Heating Industry for 70 Years*
THATCHER AVE. . . . . BRANFORD, CONN.

This period varied from one to seven days. The length of time that these individuals could remain outdoors after that depended on the pollen concentration outdoors and the sensitiveness of the individual. While some could tolerate an average of 4.9 hours outdoors, others could not be out for even one hour without suffering

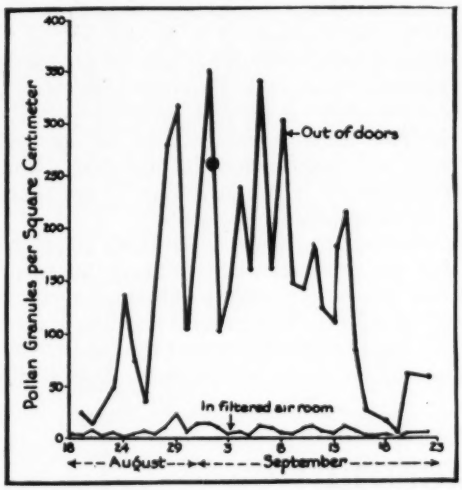



**Fig. 4— Pollen counts per square centimeter taken in filtered air room and out of doors**

an attack of asthma. Four patients were admitted before the onset of asthma, who, during previous seasons, had regularly suffered attacks. Confinement in filtered air for 14½ to 15 hours daily did not prevent the onset of asthma in these individuals.

In addition to the influence of pollen concentration

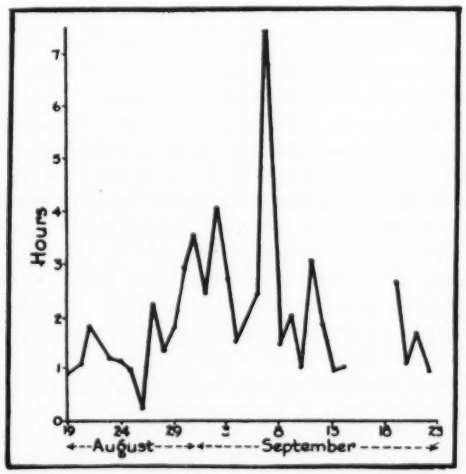
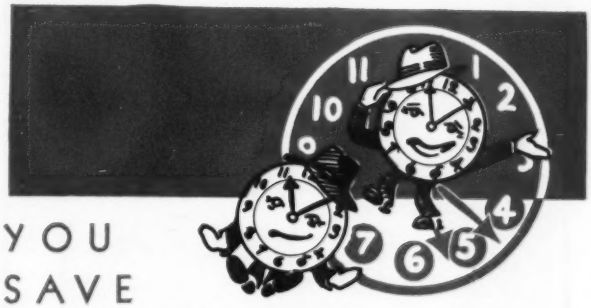



**Fig. 5—Average time required for maximum relief from hay fever symptoms on various days of the experiment**

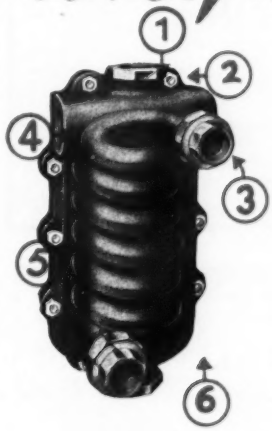
the effect of weather changes on pollen asthma was observed. On September 12, 1933, all seven patients who were in the filtered air, developed asthma simultaneously with the occurrence of a heavy rain, a marked drop in

YOU SAVE MAN-HOURS WITH GENERALS

General Water Heaters are being installed in 1 or 2 hours less time than other heaters on the market.

*Why?* FOR 6 BIG REASONS



1 Boiler connections on end of heater; tank connections point toward storage tank—less pipe and fittings, fewer threads to cut, faster circulation.

2 Octagon boss for strong wrench grip — costly slips stopped, no broken corners.

3 Heavy copper coil expanded directly into shell—no gaskets, no brazed joints—quick make up, no leaks.

4 Extra tapped hole for aquastat.

5 Clean-out cover quickly removed without breaking pipe connections.

6 Round corners on shell — faster circulation, more heat.

Taken together, these 6 advantages mean time, pipe and fittings saved—and more hot water.

*Contractors and Dealers: IMPORTANT*

The General Fittings Company has something new to help your men install water heaters correctly *the first time* under varying hook-ups. More details announced later. Meanwhile, if you want to be the first in your territory to profit from this idea, drop us a line and we'll put your name at the top of the list to receive it.

*Wholesalers: Something New to Talk About*

A sales representative handling General Water Heaters in your territory will have something different to talk about from what other manufacturers are saying about their products. We'll tell you the details of our new merchandising plan if you'll get in touch with us by mail.

*Quicker* to Install
GENERAL WATER HEATERS

General Fittings Company, Providence, R. I.
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FOLLOW THE *profit trend* TO GAS HEAT

NRA WE DO OUR PART

HEATING men with an eye to the future are capitalizing on the marked trend to *gas heat*. They are discovering they can best meet this present day demand for *reliable, economical,* completely automatic heat with BARBER Automatic Gas Burners and BARBER Pressure Regulators.

Adaptable to warm air furnaces, steam and hot water boilers and air conditioning systems, BARBER Burners are ideally suited to every gas conversion installation.

**BARBER** *Automatic Jet Gas* **BURNERS**

In specifying the correct BARBER Burner for each installation our engineering department is at your disposal.

We urge you to get in touch with us at once for complete dealer information which may put you in line for BARBER profits . . . *right now.*

*The* BARBER GAS BURNER CO.
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*There are* QUICK PROFITS *in Tank Heater Installations*

*Install the* METAPHRAM H-3 REGULATOR FOR TANK HEATERS

A new regulator of real "National" quality and dependability at a low price in keeping with the job it is designed to handle. Ask for prices and hook-up diagram which insures absolutely automatic and gradual control of all types of coal-fired tank heaters.

NATIONAL REGULATOR CO.
2317 KNOX AVENUE, CHICAGO


the barometric pressure, a sudden drop in temperature and a sharp rise in humidity. It is our belief that the atmospheric changes were important in inducing the attacks of asthma in these individuals, since the pollen count in the room and the rate of air change remained unaltered.

The results of our experiments show that the symptoms of hay fever will disappear to the point where there is practically no discomfort, in 80 per cent of the patients studied, after they have been in filtered air for three hours or less. The filtration must have a high degree of efficiency for the removal of the pollen; otherwise, no such degree of success can be obtained with respect to the disappearance of hay fever symptoms. Filtration, efficient for ordinary dust of the atmosphere might not meet these requirements.

Our experience in these experiments emphasizes the fact that the construction of ordinary filtration apparatus may not be applicable to filtration of air for the removal of pollen. The leaks around the supports for the filter forms and around the edges of the filters are usually too great to give any degree of practical efficiency.

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# Sherman —

(Continued from Page 78)

in its plain duty to protect the interests of all oil burner dealers in territories affected by gas competition.

" 'Despite the fact that the Oil Burner Code Authority entered a complete and official bill of particulars last January 3rd at public hearing in Washington on the natural gas code, nothing has been done by the administration to correct a most unequitable situation existing between the natural gas code, on the one hand, and the oil burner code, on the other,' he continued. 'In the meantime, the utilities have continued to employ misleading advertising and to engage in unethical and unfair merchandising practices not permitted the oil burner industry under its code of fair competition.'

"Headed by Mr. Bassler as chairman, the special committee on gas competition is comprised of A. J. Fleischmann, vice chairman and R. S. Bohn, vice chairman. In addition the following sub-committees were appointed: (Representing manufacturers) A. J. Fleischmann, E. A. Halbleib, Morgan J. Hammers, S. C. Hope, M. A. Powers; (Representing dealers) R. S. Bohn, New York, Ray Porter, Minneapolis, Minn., W. F. Schroeder, St. Louis, Mo., John W. Scott, Boston, Mass., and C. W. Whitney, Philadelphia.

"Those representing the A. O. B. A. at the meeting were the following: R. M. Sherman, Morgan J. Hammers, E. P. Bailey, Milton A. Powers, J. J. Donovan, Earl Marr, E. A. Halbleib, A. J. Fleischmann, R. S. Bohn, W. F. Schroeder, John W. Scott, A. G. Baerenklau, C. J. Bassler, Harry F. Tapp, Arthur W. Clark, C. A. Ott, and Carl Shields. Those representing the Distillate Burner Manufacturers Association were the following: H. H. Morse, E. T. Adams, G. F. Williams.

"M. J. Hammers, chairman of the Oil Burner Code Authority, reviewed code activities from March 5th to date. Following his recital there was a general discussion of code problems by all present."

# Questions—

(Continued from Page 99)

assuming that the top of the loop is just below the water line of the boilers; the return pipes in the loop might well be made 3 in., owing to the high velocity usually accompanying the discharge from a pump and a 3-in. pipe would slow this velocity down somewhat while passing through the loop. Therefore, we suggest using 3-in. pipe from the point where the 2-in. pump discharge connects to the bottom of the loop, up to the top of the loop and down to the boiler return connection.

The size of the balancing pipe from the steam main is dependent—as stated in the article—on the amount of grate area under the boiler being 1½-in. up to 4 sq. ft.

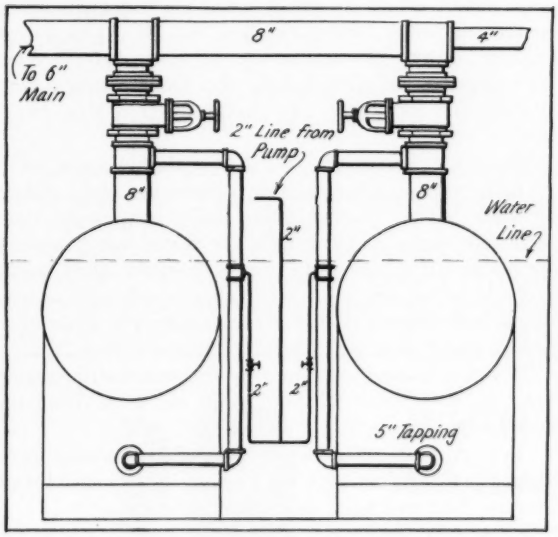


Fig. 1

of grate area, 2½-in. from 4 sq. ft. to 15 sq. ft. of grate area and 4-in. when the grate area is over 15 sq. ft. The boiler water lines cannot be held absolutely on the same level with the loop when the top of the loop is slightly under the water line, as the loop does not really come into action until the water line in the boiler reaches the bottom of the *invert* of the horizontal pipe at the top of the loop; the water line, however, will not go below this invert level as long as there is sufficient water in the boiler. By this is meant that the water cannot be backed out of the boiler below this invert level. It would be possible to fluctuate the water line to this extent (from normal water line down to the invert of the loop) even in a boiler with the loop, as the loop is only protection against undue fluctuation of the water lines.

### North Carolina Heating Contractors Organize

Heating contractors from all parts of North Carolina held a meeting at the King Cotton Hotel in Greensboro N. C., on Wednesday evening, May 16, and organized the North Carolina Association of Heating, Piping and

Every new or old heating job, Large or Small, should have an

EXCELSO

QUALITY WATER HEATER

There is a type and size for every building.

Capacities range from 30 to 2500 gallons.

EXCELSO PRODUCTS CORP.
57 Clyde Avenue Buffalo, N. Y.
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Ask Your Jobber

CASH ACME
IT'S AUTOMATIC

Dependable Diaphragm Type

Relief Valves For Water and Air

Cash Acme has developed a relief valve seat that makes "sticking" as out of date as silk shirts.

You can depend on this valve to protect range boilers, water heaters or heating systems against excessive pressures.

Wherever water is heated this protection is needed. Write for heating specialty bulletin D1 showing the entire Cash Acme Line of valve specialties. Or order from your jobber.

Type FH Relief Valve
Sizes ½" - ¾" - 1"
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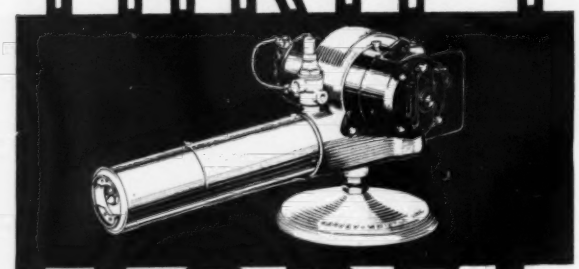
THRIFT



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*Designed for*

**THE MODEST POCKET BOOK**

This new oil burner—the fifth in the complete Master Kraft line—is winning dealer support everywhere. Designed for smallest homes and bungalows. Operates on only 1 to 1½ gallons per hour. New low cost. New fuel savings. Backed by powerful sales-producing campaign.. Write for details of the 1934 Master Kraft Profit-Making Plan.

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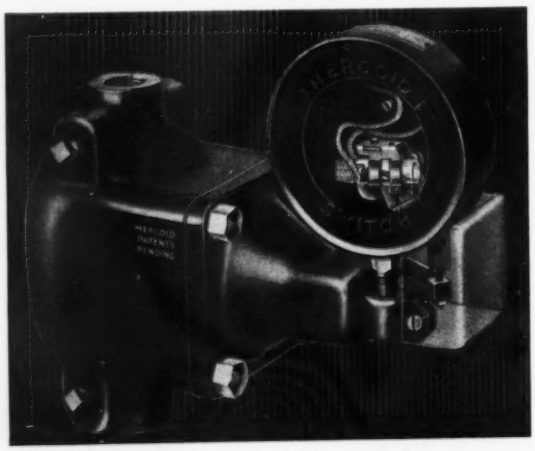
Master Kraft
OIL BURNER



"PROTECTS"

the steam boiler at the water level and prevents firing into a dry boiler. A very desirable control with a new low range at a new low price for domestic automatic oil burner, gas or stoker installations.
Mercoid Figure 72 control is standard in every respect, except that it is equipped with a float for 30 pound maximum pressure.

List Price $30.00
DEALER'S NET PRICE AT CHICAGO, $16.00
Other controls available for pressures up to 300 pounds.
FIG. 71 FOR COMBINED PRESSURE AND LOW WATER CONTROL
*Write for bulletin No. 210*
*Mercoid Controls Are Also Distributed and Stocked in Many Cities By The Graybar Electric Co., Inc.*

THE MERCOID CORPORATION
*Sole Manufacturers of The Mercoid Switch*
4221 Belmont Avenue . . Chicago, Illinois

Air Conditioning Contractors, and elected the following officers: President, E. H. Brandt, Jr., Charlotte; vice president, W. W. Dick, Greensboro; secretary-treasurer, Edward Harding, Greensboro. The executive committee will consist of the officers and John Bagwell of Durham and A. Z. Price of Charlotte. This committee is now at work on constitution and by-laws for new organization.

---

# Piping—

(Continued on Page 89)

difference in the two water lines even when there is no fire in one of the boilers.

"The second sketch (Fig. 3) shows that if check valves are used and one sticks, or if one flapper is heavier than the other, one water line will always be lower than the other. Naturally the greatest difference in water lines occurs just before the pump starts again. At this time the water may disappear from one water glass.

"The third sketch (Fig. 4) shows what happens when one boiler steams faster than the other when check valves are used. The faster steaming boiler evaporates more water into steam and naturally the water line is always low because it cannot draw water from the other boiler if check valves are used. In other words, if for any reason both boilers do not carry exactly the same load, the two water lines will not be on the same level."

"But this doesn't explain why the water disappeared from the first boiler we fired while we were firing the second one, does it?"

"Yes, it does. You were using flash burning coal, weren't you? When you fired boiler No. 1 you built up a terrific heat in a very short time, didn't you?"

"I'll say we did."

"This naturally generated a large amount of steam in a short time. Then when you opened the fire door of boiler No. 2 you really checked the fire while you were cleaning it and throwing in the coal. At the same time you let in a lot of cold air which chilled the steam drum. Consequently, the amount of steam generated in boiler No. 2 decreased to almost nothing. In this way the whole load was thrown on boiler No. 1. It evaporated a great deal of water and since the check valves would not permit it to draw water from the other boiler, the water line dropped rapidly. Does this explain everything?"

"Yes, it does. Why didn't I see that? What shall I do—remove both check valves?

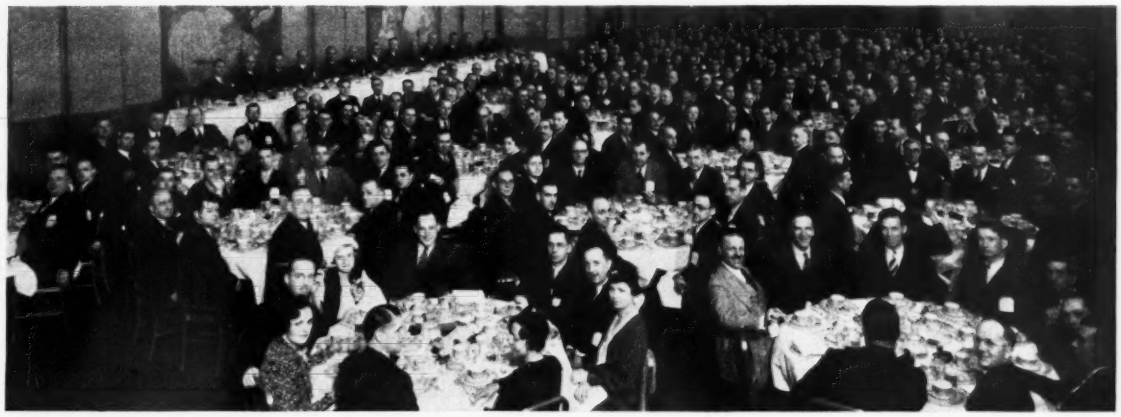
"No. I wouldn't do that. Leave the bodies in, but remove the flappers."

"That's just exactly what I'll do, the first thing tomorrow morning."

"Let me know how the job works after you do this, will you, please? I'll be wondering about it."

"If it doesn't work, I'll wire you to come down. If it does, I'll send you a box of cigars."

"Two days later we received the following telegram: 'Job working perfectly,' and the next day a box of cigars arrived. Yes, they were good ones.



Dealers and Officers of Motorstokor Corporation at its recent annual banquet in the Hotel New Yorker, New York City

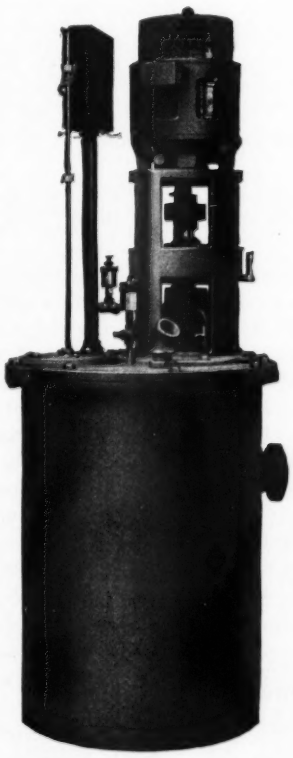
## Motorstokor Corporation Holds Successful Sales Convention

Motorstokor Corporation of 290 Hudson Street, New York City, recently held an exceedingly successful two-day sales convention in the Hotel New Yorker in New York.

This convention was attended by out-of-town and local dealers and many friends. The first day's morning session was held in the North Ball Room of the hotel, in which a stage was set up behind the speakers' table with the company's standard display background of attractive red and black panels, and the new sales helps were prominently displayed. New models were located on the stage hidden by green draperies which were later removed to permit inspection of the new machines by the dealers.

Harry L. Siegmund, sales manager and chairman of the convention, extended a hearty welcome to all those present and introduced the first speaker on the program, Gordon M. Peltz, chief engineer of the Motorstoker Corporation, who delivered a most instructive address on "The Romance of Design and the Functions of the Designer."

Following his address, Mr. Siegmund introduced Wal-

**WHEN CONDENSATE RETURNS ARE BELOW THE BASEMENT FLOOR LEVEL**

The Ames Condensate Pump, illustrated, is an ideal unit for pumping the returns back to the boiler.

It is a highly efficient and compact unit, taking up but a small amount of installation space.

Like all Ames Pumps, it is DISTINCTIVELY DIFFERENT.

NRA WE DO OUR PART

**AMES PUMP COMPANY, INC.**
30 CHURCH STREET • NEW YORK, N. Y.

*Manufacturers of vacuum heating, condensate, centrifugal pumps, and fuel oil pumping-heating units*

**Division of American Locomotive Company**

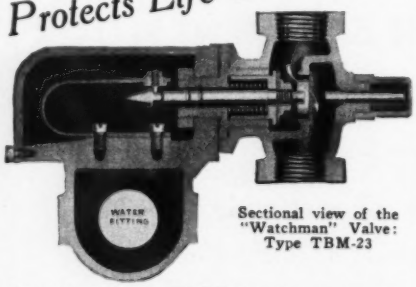
Representatives in all principal cities. Products manufactured and sold in Canada by Montreal Locomotive Works, Ltd.

**Ohio Brass Company**
Mansfield 1679V Ohio

The "Watchman" —always on duty to prevent trouble.

*For Sale by Leading Plumbing Supply Jobbers and Wholesalers.*

*This Valve Protects Life & Property*




Sectional view of the "Watchman" Valve: Type TBM-23

The Lovekin "WATCHMAN" Emergency Gas Shut-Off Valve is ALWAYS ON DUTY to guard against the exploding of any NON-AUTOMATIC TYPE of Gas Water Heater.

With the "Watchman," you just can't forget to turn off the gas because he turns it off for you—automatically and positively.

Here's a Valve that's EASY TO SELL YOUR CUSTOMERS because it's so positive in action, so fool-proof and, most of all, so ABSOLUTELY NECESSARY.

The operation of the "Watchman" Valve prevents the bursting or exploding of the tank because it is designed to turn off the gas before the water gets dangerously hot.

This Valve gives more than SAFETY—it gives freedom from worry and peace of mind.

Address Dept. "R"

**KITSON CO.**
WESTMORELAND & STOKLEY STS.
PHILADELPHIA PA.

ter Barnum, president of Motorstokor Corporation, who read his "President's Message," in which he spoke about "The Future of the Stoker Industry" and painted a great picture of the "Finest Automatic Heat in the World."

The next speaker was Charles Redfield, director of sales training for the American Radiator Company, who spoke convincingly and entertainingly about "The Art of Selling," backed up by facts and a long experience.

W. A. Doppler, sales promotion manager of Motorstokor Corporation, followed with an outline of the 1934 sales promotion and advertising program of the company. He reviewed the many activities, both those under way and those contemplated, and the great number of dealer helps, direct mail suggestions, etc., which are outlined in detail in the company's sales promotional manual.

Mr. Siegmund then lifted the covers off the company's new stoker models, and the morning session was adjourned to permit inspection by the dealers before luncheon.

Following luncheon the afternoon session was called to order in the Main Ball Room. Carroll B. Huntress, executive secretary of the National Coal Association, was the first speaker at this session, his topic being "The Small Stoker and the Coal Industry." He was followed by Edward Cusick, sales manager of the Direct Mail Department of R. L. Polk Co., who spoke on "The Value and Importance of Systematic Direct Mail as an Aid to Specialty Selling."

R. W. Lawrence, president of the Bankers Commercial Security Co., was the next speaker. "Time Payment Sales" was the subject of his forceful and interesting talk.

Wm. G. Christy, smoke abatement engineer, Hudson County, N. J., gave a brief talk on "Stokers as an Aid to Smoke Abatement," in which he told of the efforts made by the authorities in Hudson County to reduce the smoke nuisance.

R. L. Platka, treasurer of E. S. Adsit Coal Co., Burlington, Vt., spoke most interestingly about "Stokers as a Public Utility."

W. L. Higgins, general manager of Motorstokor Corporation, brought this session to a close with a clear and forceful explanation of the company's new policies, embodying several changes which are all in the interest of the dealer and improve his position.

The second day of the convention was devoted to an engineering session in the morning and a sales session in the afternoon. Special attention was given to the company's mailing campaign, which enables every dealer to circularize 24 prospects with three individual mailings for each machine shipped to him.

Those who attended the convention were of the opinion that it was highly successful from every angle.

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### Harvey-Whipple, Inc., Installs New Equipment

Harvey-Whipple, Inc., of Springfield, Mass., manufacturer of oil burners, has recently installed much new equipment in its plant in that city. One addition consists of a spot-welding machine for the production

of air-delivery bands and air shutters. Another consists of automatic equipment for making blast air tubes, which conduct the air to the burner. Another machine performs four operations, including trimming, facing, boring and finishing pump bracket housings. Still another addition is an automatic tool for boring and facing the blower housing. This company has also recently fitted up a testing laboratory and a drafting and blue print department.

Sales by this concern since the beginning of this year have increased 100 per cent over the corresponding period of 1933.

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### Will Sell Air Conditioning Through Established Trade Channels

Special simplified air conditioning equipment to be used in conjunction with radiator heating systems and sold by the contractors who are now supplying those systems is now being prepared for sale by the affiliate companies of the American Radiator & Standard Sanitary Corporation, according to Fowler Manning, director of the air conditioning division of the corporation. Mr. Manning made this statement in announcing the appointment of E. V. Walsh, formerly vice-president in charge of sales and advertising for the Timken Silent Automatic Company, as sales manager of the air conditioning division of the Campbell Metal Window Corporation, one of the affiliates of the American Radiator & Standard Sanitary Corporation.

Following experimentation with product development and experimentation with air conditioning selling now under way in the New York area, the Campbell Corporation will inaugurate nation-wide marketing through the plumbing and heating trade, Mr. Manning said. "We are convinced," he declared, "that the interest of the public is going to be best served if we supply air conditioning equipment through the channels that we are now using to supply heating equipment. The heating, piping and plumbing contractors must be protected in the air conditioning field. They must have placed at their disposal equipment that will enable them to provide the public with air conditioning just as effectively and satisfactorily as they have provided the public with heating, in the past."

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### Bethlehem Foundry & Machine Co. Holds Sales Meeting in New York

The Oil Burner Division of the Bethlehem Foundry & Machine Company of Bethlehem, Pa., held a sales meeting at the Hotel McAlpin in New York City on Thursday, May 10. The outstanding feature of the meeting was an address by E. C. Clarke, vice president and general manager, in which he gave a clear explanation of the construction and operation of the company's line of the Doe oil burner, a burner of the pressure atomizing or gun type, which is made in six sizes to cover all domestic and commercial demands.

Wm. M. Goodwin of Bethlehem, Pa., gave an interesting talk on "Selling Tools," which was followed by a dramatization featuring the coal-minded prospect, the competitive-minded prospect, and the "price and terms" prospect.

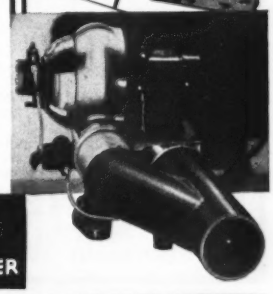
The meeting was in charge of S. C. Carrier, manager


10 VICTORY BARRAGES

Turn Prospects Into Orders With Wayne's Coalitosis Campaign!

WAYNE Dealers enjoy a constant flow of live prospects developed by the Wayne Coalitosis Campaign. *Ten powerful folders pave the way. Then the Coalitosis Evidence Book shocks prospects into action!* You have more prospects selling Wayne Oil Burners. *Write today for information* about this powerful sales campaign that will increase your prestige and profit.

Wayne Oil Burner Corp.
*602 Glasgow Ave., Fort Wayne, Ind.*



WAYNE
THE WORLD'S FINEST OIL BURNER

*This is why*
B & G TRIPLE DUTY SYSTEMS
*are fast, profitable sellers*

The figures above (from an actual installation) are typical of savings made by B & G Triple Duty Heaters on hot water systems. Our files are loaded with similar records. Send for these amazing facts—they pave the way to easy sales!

Adaptable to any hot water heating system, automatically or hand-fired, B & G Heaters assure ample domestic hot water, Winter and Summer, plus improved circulation, automatic control of room temperature and almost instant heat at radiators. More comfort and convenience at smaller cost. For steady modernizing business, get acquainted with B & G equipment. **Air mail service on sketches.**

BELL & GOSSETT COMPANY
3000 Wallace St., Chicago

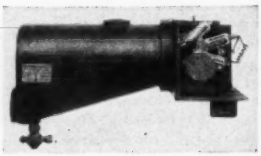
ARE YOUR CLIENT'S RADIATORS HOUSEBROKEN?

Hissing and sputtering air valves ruin an owner's disposition ... and sometimes rugs and wall paper. Rid your clients from these annoyances and free yourself from a lot of unprofitable service...specify and use B & J vapor and vacuum heating systems...backed by more than 30 years' experience . . . built to give dependable, trouble-free operation. Want our latest catalog?

BARNES & JONES *Inc., 195 Brookside Ave.* BOSTON, MASS.

BIAD and TRIAD ● SWITCHES

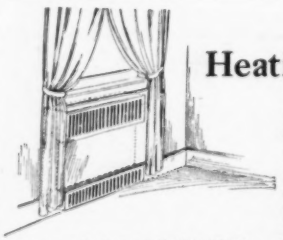
*Specify this* EXTRA MEASURE *of* BOILER SAFETY



BIAD and Triad Switches provide an *extra measure of safety* for automatic fired boilers which will be appreciated by heating men who have had experience with burned out boilers. You can depend faithfully upon these water level controls and the positive, low cost protection which they afford. Send for descriptive literature.

NEWARK

BOILER REGULATOR COMPANY, Inc.
428 GLENWOOD AVENUE, EAST ORANGE, N. J.



*Certified* Heating Performance

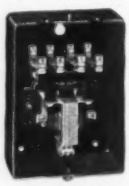
The *Only* heater that gives *Certified Performance* is CONVECTOFIN. Enables you to know precisely, in advance, what heating results will be. Takes the place of radiators. Used with your favorite boiler. Write for literature. No obligation.

*Types and sizes of CONVECTOFIN are made for every heating and construction condition. Costs less to install. 15 pieces less to handle and make up.*

Commodore Heaters Corp.
11 West 42nd Street, New York

CONVECTOFIN

The BUILT-IN HEATER



A. C. & D. C. Relays and Contactors

Allen-Bradley A. C. & D. C. Contactors are made in more than 200 standard types for every service. Furnished with or without enclosing cabinets in one- to eight-pole combinations. Send for bulletin and prices, today!

ALLEN-BRADLEY
1317 S. First St. : : Milwaukee, Wis.


of the Metropolitan New York district, and among those in attendance were J. Howard Van Sciver, president of the Bethlehem Foundry & Machine Co., and D. W. Lodge, its manager in the Philadelphia district.

### Air Reduction Sales Co. to Distribute Brazing Alloy

Handy & Harman of New York, N. Y., and Bridgeport, Conn., have made arrangements with the Air Reduction Sales Company of New York City, whereby the latter concern will distribute Handy & Harman's brazing alloy through its various distributing points in the United States. This alloy, which is known as Sil-Fos, flows freely at 1300 deg. Fahr. and its use is reported to be expanding rapidly in many fields where non-ferrous metals are joined.

### Appointed Manager of Air Conditioning Division

The Edwards Manufacturing Company, Cincinnati, Ohio, has announced the promotion of W. G. Senft, engineer, to manager of its Heating and Air Conditioning Division. Mr. Senft has been associated with the design, production and sale of Hot-Kold winter air conditioning units since 1929. During this period these units have been developed and improved, adhering, however, to the original design which applied the two fundamental principles of counterflow heat exchange and higher air velocities.

W. G. Senft

### Announces Changes in Discounts

Changes in discounts to various classes of trade, particularly upon smaller quantity orders, have just been announced by H. E. Kerr, president of the Barber Gas Burner Company of Cleveland. Changes are announced in new discount cards which show a more liberal discount and carry a retroactive clause applying to accumulating purchases over six-month periods.

### Jerry Jokerst, Inc., Holds Formal Opening in New Location

Jerry Jokerst, Inc., of St. Louis, Mo., recently held a formal opening of its new oil burner display rooms at 4701 Washington Boulevard in that city, having moved its display rooms and offices from 4424 Olive Street to the above address. The formal opening was marked by many features, such as music and refreshments, and it was attended by several hundred customers and friends. M. D. McWilliams, vice president in charge of sales, represented the Century Engineering Corporation of Cedar Rapids, Iowa, which manufactures the oil burners sold by Jerry Jokerst, Inc.

## Statement by Morgan J. Hammers,

**Chairman Oil Burner Code Authority, Incorporated**

Because of news items carried in the press following the hearing of the Oil Burner Code in Washington, May 8, I feel it my duty to advise the industry of the following facts:

Following the hearing of May 8, newspaper accounts of the proceedings indicated that the legality of the procedures in connection with the Code Authority's collection and disbursements of levy assessments has been challenged by the National Recovery Administration.

The collection of levies and the procedures adopted by the Code Authority were approved for the Administrator by the Deputy Administrator who had been assigned to the Oil Burner Code as the Administrator's representative. We have been advised by our counsel that this approval was an approval by the Administrator in accordance with the law and we have also been advised that this has been the legal opinion of the Legal Division of NRA. All levies collected by the Code Authority have been recorded with the Deputy Administrator, and in addition the Code Authority has filed a record of every disbursement that has been made. This information was filed with NRA prior to the public hearing of May 8.

In keeping with sound business practice, the Code Authority has in all matters pertaining to the Code acted in good faith, keeping in mind the trust imposed upon them by the industry—and on the basis of instructions received from the Deputy Administrator originally assigned to the Code.

At the January meeting of the Code Authority the compensation of the Chairman for all his Code services, past, present and future, was fixed at $9,150.00 and made a matter of record with the National Recovery Administration at that time. This amount and no more has been paid, as recorded in the budget on file with the NRA. The last payment was made as of March 31, 1934. No further compensation of any kind was contemplated or provided for in the budget, although he has rendered full-time services to the Code Authority from October 1, 1933, to date.

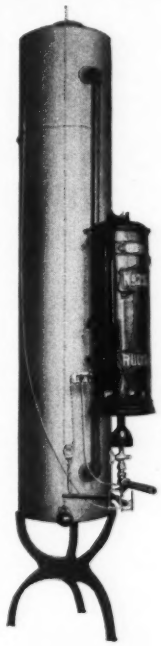
The Code Authority has nothing to conceal and has filed complete information as to all of its activities with the National Recovery Administration at regular intervals.

## Micro Corporation Exhibits At A Century of Progress in Chicago

Micro Corporation of Bettendorf, Iowa, is participating in the Bettendorf Industries Exhibit at booth 4, Home Planning Hall in A Century of Progress in Chicago. Particular emphasis is placed on the company's new line of oil burners.

## A. S. H. V. E. Semi-Annual Meeting Will Be Held at Buck Hill Falls, Pa.

The Semi-Annual Meeting of the American Society of Heating and Ventilating Engineers will be held at the Inn at Buck Hill Falls, Pa., June 20, 21 and 22. Members of the Philadelphia Chapter of the Society will be hosts at this meeting, and through the chairman of the publicity committee, J. H. Hacker, they have issued an invitation to all members of the Society to attend the meeting.

*A New Control*

The E-Z-Lite Gas Water Heater Control is automatic in operation — the tank cannot be overheated —you cannot waste gas. Manually operated which eliminates complicated wiring and reduces installation costs. Easily installed — it replaces a fitting in the present heater installation — No new piping is required. Wall panel is located at convenient point in upstairs room. Low in cost. A big market is waiting for this new control. Write for prices and information.

AUTOMATIC PRODUCTS COMPANY

121 N. BROADWAY MILWAUKEE, WIS.

Dealers Wanted for FREDERICK STOKERS

AN OPPORTUNITY to handle a Reliable, Efficient line of Underfeed Stokers made by an old, dependable Stoker Manufacturer awaits WIDE-AWAKE DEALERS in various sections of the country.

FREDERICK STOKERS give the Dealer unlimited sales possibilities in Homes, Apartments, Office Buildings, Schools, Institutions, Hospitals, Greenhouses, Laundries, Bakeries, etc., etc. In fact, wherever coal can be used for Heating, Processing or Moderate Power Requirements.

AND REMEMBER, Frederick Stokers are available for either Bituminous or Anthracite Coals—A DECIDED SALES ADVANTAGE FOR DEALERS.

*Write for Interesting Dealers Proposition*

THE FREDERICK IRON & STEEL CO.

Department S-D

FREDERICK - - - MARYLAND

HOFFMAN
now offers the MOST COMPLETE LINE of STEAM HEATING SPECIALTIES
VALVES
TRAPS
PUMPS
FOR EVERY TYPE OF STEAM HEATING SYSTEM
For full information See Your Wholesaler or write to
Hoffman Specialty Co., Inc., Waterbury, Conn.

The PRESIDENT
Atlantic City's
Newest Boardwalk Hotel
☆
Sea Water Swimming Pool
Marine Sun Deck
☆
American and European Plan
☆
Also Beautifully Furnished Housekeeping
Apartments—Pleasing Rentals
☆
One Step from Our Lobby to the World's Greatest Promenade—Ten Miles of Boardwalk—Bracing Sea Air—500 Rooms with Salt Water Baths—Complete Hotel Service and Home Privacy—Modest Rentals.

The Inn at Buck Hill Falls, one of America's better resort hotels, is delightfully situated with facilities for entertainment, including golf, riding, tennis, swimming, trout fishing, billiards, lawn bowling, etc.

Comprehensive technical and entertainment programs have been prepared.

The American Society of Refrigerating Engineers is meeting at the same time, with headquarters at Skytop, six miles from Buck Hill, and certain activities will be enjoyed jointly.

The official program follows herewith:

PROGRAM SEMI-ANNUAL MEETING 1934, AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, THE INN, BUCK HILL FALLS, PA.
(All Events on Daylight Saving Time)

**Tuesday, June 19, 1934**

9:30 a. m. Guide Publication Committee Meeting.
1:30 p. m. Meeting of the Committee on Research.
7:00 p. m. Dinner and Meeting of the Council.

**Wednesday, June 20, 1934**

9:00 a. m. Registration.
9:30 a. m. Greeting—C. V. Haynes, President.
Technical Papers:
Criteria for Industrial Exhaust Systems, by J. J. Bloomfield. Dry Bulb vs. Effective Temperature Control, by A. E. Beals.
Influence of Stack Effect on the Heat Loss from Tall Buildings, by Prof. Axel Marin.
Wind Velocities for a Building and Their Effect on Heat Loss, by F. C. Houghten, J. L. Blackshaw and Carl Gutberlet.
12:30 p. m. Get-together Luncheon (Main Dining Room)—Address: Examining the Construction Recovery Program, by Malcolm Muir, Pres. McGraw Hill Co.
1:30 p. m. Men's Golf Tournament—Buck Hill Course.
2:00 p. m. Ladies' Swimming Party at the Pool.
7:00 p. m. Beefsteak Dinner at Skytop with A. S. R. E. Members and Ladies.

**Thursday, June 21, 1934**

8:30 a. m. Breakfast Meeting of Nominating Committee.
Morning: Morning Setups for Ladies—Bowling on Green or Swimming in the Pool.
9:30 a. m. JOINT SESSION OF A. S. R. E. & A. S. H. V. E. W. H. Carrier, Presiding.
A. S. R. E. Technical Papers:
The Water Vapor Centrifugal Compressor, by Paul Bancel.
Electric Rate Making for Small Air Conditioning Units, by D. W. McLenegan.
10:30 a. m. Intermission.
Address: The Re-employment of the Construction Industry, by Thomas S. Holden, Vice-Pres., F. W. Dodge Co.
A. S. H. V. E. Technical Papers:
Operating Results of an Air Conditioning System Compared with Design Figures, by J. R. Hertzler.
What Is the Cooling Load Factor in Air Conditioning? by John Everetts, Jr.
1:30 p. m. Bridge Luncheon for Ladies at Buck Hill Tennis Club.
Research Cup Tournament for A. S. H. V. E. Members at Buck Hill Course.
7:45 p. m. Banquet, Entertainment and Dance (Main Dining Room).

**Friday, June 22, 1934**

9:30 a. m. Amendments to Constitution and By-Laws.
Technical Papers:
Insulating Value of Bright Metallic Surfaces, by Prof. F. B. Rowley.
Heat Transfer from Direct and Extended Surfaces with Forced Air Circulation, by Prof. G. L. Tuve and C. A. McKeenan.
Factors Affecting the Heat Output of Convectors, by Prof. A. P. Kratz, M. K. Fahnestock and E. L. Broderick.
Morning: Automobile Trip for Ladies of A. S. H. V. E. and A. S. R. E. to points of interest in the Poconos.
12:30 p. m. Luncheon—(Main Dining Room).
Afternoon: Trip for Ladies to Skytop for Duplicate Bridge and Refreshments.
2:00 p. m. Golf for Men at Skytop Course.

# Business Personals

DOUGLAS ANNIN has joined the sales and engineering staff of the Minneapolis-Honeywell Regulator Company of Minneapolis, Minn., according to announcement just issued by C. B. Sweatt, vice president in charge of sales. Mr. Annin was formerly chief engineer of the Neilan Company, Ltd., Los Angeles, and when this concern was merged with the Mason Regulator Company, he became sales engineer for the Mason-Neilan Regulator Company of Boston. He is a graduate of the California Institute of Technology.

JACK L. BRUNS has been appointed district manager in the Metropolitan New York area for the heating specialty and oil equipment lines of the Milwaukee Valve Company of Milwaukee, Wis. He will make his headquarters at 846 Chrysler Building, New York City, where Ira Hodes also is located and in charge of the bronze valve department of the same company, as recently announced in these columns.

JOHN R. COOPER, who has been eastern branch manager for the Thermal Unit Manufacturing Co. with offices in New York for the past six years, on May 1 was transferred to the main office at Chicago as sales manager. This company manufactures heating and air conditioning equipment. The Arctic Engineering Co., 123 White Street, New York, N. Y., will be distributor for the Thermal Units company in the eastern territory.

HERMAN F. LEHMAN, assistant manager of the commercial division of the Frigidaire Corporation, with headquarters in Dayton, Ohio, has been appointed manager of the St. Louis branch of Frigidaire Corporation, subsidiary of General Motors, according to announcement issued by H. W. Newell, vice president in charge of sales.

O. C. PARKER, formerly wholesale representative for Timken Silent Automatic Corporation, has joined the Toridheat Division of Cleveland Steel Products Corporation of Cleveland, Ohio, as district sales manager. He will contact present dealers and distributors and establish new outlets in Minnesota, Wisconsin, Illinois, Iowa and Nebraska. William R. Porter, formerly Timken branch manager, has been appointed manager of the Toridheat oil burner department of Waite & Faunce, New Bedford, Mass.

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### Pocket Size Catalog of Heating Boilers

Hart & Crouse Co. Inc., of Utica, N. Y., has just issued a pocket catalog of some of its jacketed boilers for steam, hot water, and vapor, with capacities from 250 sq. ft. of radiation up to and including 4,240 sq. ft. This catalog is printed in 2 colors, black and red, and is exceptionally attractive.

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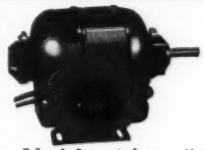
### Bulletin on Air Conditioning

B. F. Sturtevant Company of Hyde Park, Boston, Mass., has issued a twelve-page bulletin on Air Conditioning, stressing the point that by its use industry is freed of weather hazards. Illustrations show and the

*Below Ground Level Kent Profits* ★ *Await YOU*

Many heating men, eager to get out of the red, have discovered that the KENT Suction Cleaner is one *sure* means. Every basement holds a potential profit for the heating man who goes after this business. The KENT gets him in and, besides the cleaning job, often paves the way to profitable repair work. Learn more about the KENT—ask us for further information.

*The* KENT COMPANY, INC., *Rome, N. Y.*



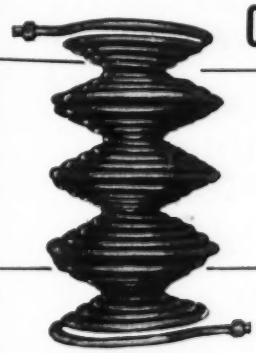
Resiliently Mounted Motors

Ideal for stoker, oil burner, air conditioner, refrigerator and other applications demanding *quietness in operation*—isolation of noise and vibration. Ratings up to and including 3 H. P. Sample available for test.

A. C. Repulsion-Induction. Interchangeable frames. D. C. and Polyphase. Specials where required.

THE LELAND ELECTRIC COMPANY
Dayton, Ohio

Canadian Address Toronto — Leland — Cable Address Lelect

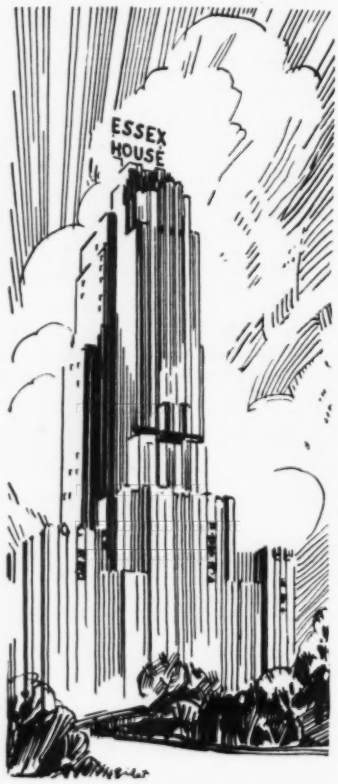


COPPER COILS

for all makes of Instantaneous Water Heaters
"Coils That Are Really Guaranteed"
Catalogue Price List Mailed on Application
Also Mfrs. Water Motors

UNION COIL & MFG. CO.
207 INVESTMENT BLDG.
PITTSBURGH, PA.

USE THE COUPON
*on*
PAGE 98
*to get your copy of*
AIR CONDITIONING SIMPLIFIED




*A PRODUCT OF YOUR GENIUS AND ENGINEERING SKILL STANDS READY TO SERVE YOU AT*

**ESSEX HOUSE**

**160 Central Park South**
**New York City**

**When those humid, sweltering days of summer come upon us, remember that the Teakwood Dining Room, Persian Coffee Shop and Cafe Essex are completely air-conditioned. Then, too, there are extra large rooms and suites. Essex House is a forty-story, ultra modern hotel, overlooking the 840 beautiful acres of Central Park.**

text describes many successful installations in textile mills, bakeries, candy factories, printing plants, tobacco and cigar factories, breweries and flour mills.

### Bulletin on Split Phase Motors for Oil Burners

The Emerson Electric Manufacturing Company of St. Louis, Mo., has issued a bulletin with descriptions and illustrations of its split phase motors for oil burners, beer pumps, fans, blowers and air conditioners. These motors have compression spring washers on shaft at both ends of armature, to overcome any tendency for the armature to oscillate. They are inserted between phosphor bronze and steel washers, need no attention and eliminate end play noise.

### Issues Pamphlet on Air Conditioning

International Heater Company of Utica, N. Y., has just issued a neat pamphlet on "Air Conditioning," giving in condensed form a large amount of information about this subject, accompanied by many illustrations of this concern's air conditioning units and accessories. Among the points covered are: Cleaning of Air, Humidifying Air, Circulating Air, Heating and Cooling. The outstanding features of the mechanical and electrical construction and operation of the company's air conditioning units are also covered in a most thorough manner.

### Envelope Stuffer Tells About Radiators and Air Valves

American Radiator Company of New York City has just issued an envelope stuffer featuring its Corto radiator, its radiator enclosures and radiator valves. This stuffer is seeking to capture for the heating industry the modern consumer sales appeal. Being issued for use by contractors in reaching the public, the stuffer departs from the conventional form of heating literature to gain a presentation that will convey to the home owner a unified impression of the appeal that this radiator has for him. The literature is printed in black, yellow and magenta, and it is exceedingly attractive.

### New Circular About Air Conditioning

General Electric Company of Schenectady, N. Y., has just issued a circular, "How to Make Old Houses Modern and Keep New Homes from Becoming Old Fashioned," which describes and illustrates one of its air conditioning systems.

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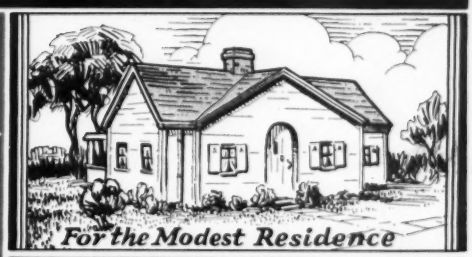
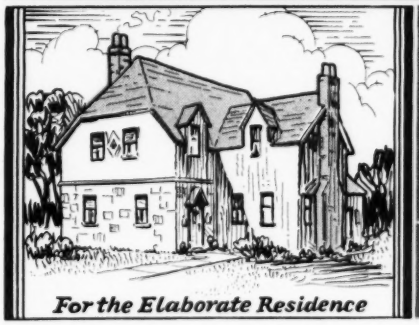
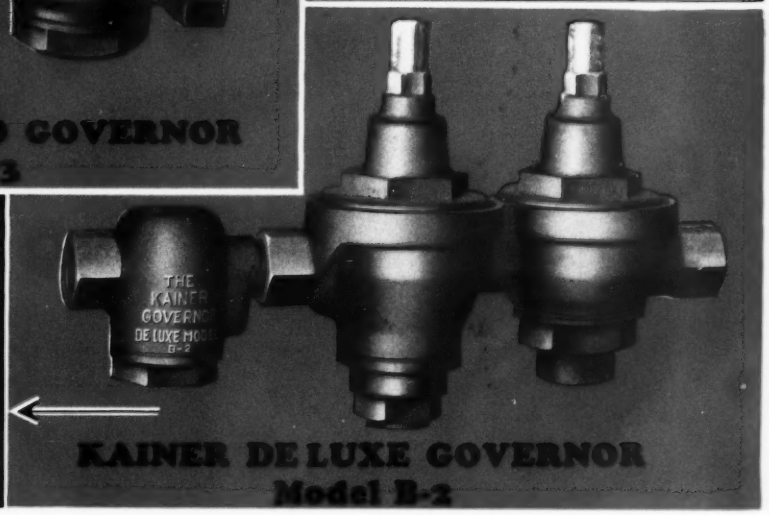
### Dates Fixed for the Eleventh National Exposition of Power and Mechanical Engineering

The Eleventh National Power Exposition will be held December 3 to 8, 1934, at Grand Central Palace, New York City, according to announcement just issued. Irving E. Moultrop is chairman of this year's advisory committee, and among other members of this committee are: Homer Addams, past president of the American Society of Heating and Ventilating Engineers, and Charles V. Haynes, president of the American Society of Heating and Ventilating Engineers.

# A KAINER GOVERNOR For Any Hot Water Job In Both Moderate and Elaborate Homes!...




## *Sold By Better Jobbers—See Your Nearest*

C-3 is all you need say to your jobber to obtain a KAINER STANDARD GOVERNOR.

This model for Hot Water Heating Plants is particularly popular ***now*** with the Heating Trade generally. It is a fast selling specialty and recent sales records indicate that contractors recognize the outstanding merits of this model in both its construction and price.

Easily installed it makes a fully closed system with ***dependable automatic*** control of the hot water. ***Essential qualities*** in both ***material*** and ***points of function*** have been strictly maintained in this unit

Ease of inspection without disturbance—Accuracy and reliable performance are assured you at ***No Greater,*** in fact at ***more nominal cost.***

B-2 designates to your jobber that you want a KAINER DE LUXE GOVERNOR—the pioneer Hot Water Heating Plant control of our entire line.

Thousands of very ***representative*** and many very ***elaborate*** homes throughout the country are De Luxe equipped.

Every conceivable engineering principle has been evolved around and employed in building this top-notch unit which also enjoys an enviable sales record since ***contractors*** unhesitatingly ***recommend*** our De Luxe Governor on jobs where owners ***insist on*** the very ***finest obtainable.***

As background, Kainer Products have over twenty years of manufacturing experience and research. Kainer Governors have an ***exclusive*** feature that allows ***complete inspection*** without disturbing any mechanism or existing adjustments.

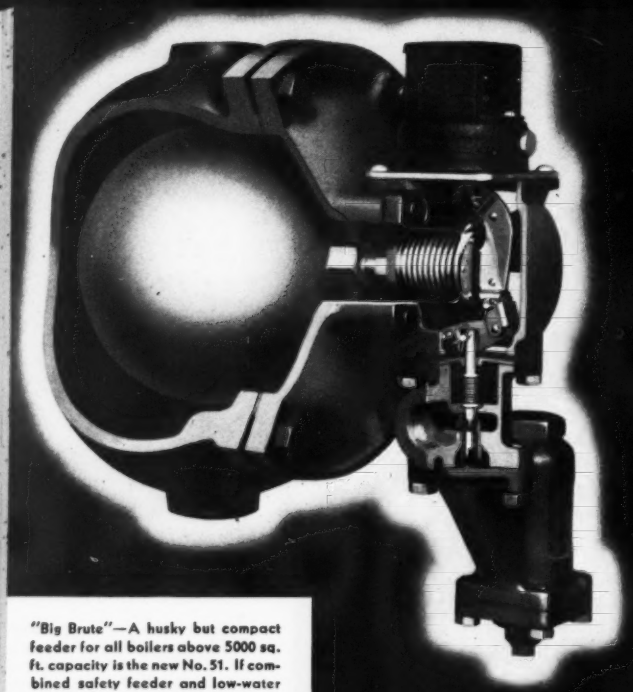
**KAINER & COMPANY-- 761 Mather St.--CHICAGO**

FIRST WITH PACKLESS CONSTRUCTION

FIRST WITH DOUBLE SYLPHON

FIRST WITH COOL FEED VALVE

FIRST WITH QUICK HOOK-UP



"Big Brute"—A husky but compact feeder for all boilers above 5000 sq. ft. capacity is the new No. 51. If combined safety feeder and low-water cut-off is required order No. 51-2.

# ... and NOW ANOTHER BIG STEP!

Once more the policy of "Doing One Thing Well" has brought about another big advance in McDonnell Boiler Water Level Controls. You can now add, "First with the powerful straight thrust valve action" to the long list of pioneering steps that has made McDonnell equipment the standard of comparison among boiler water level controls.

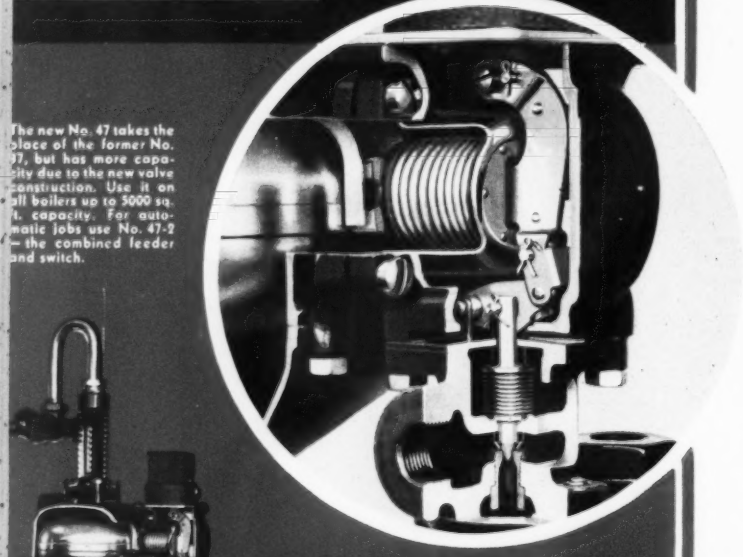
The new valve mechanism is illustrated opposite. Its important features are: (1) An ingenious compound-leverage mechanism which doubles the effective closing power of the float, and (2) A cam and roller action which gives a perfectly straight thrust to the valve for the first time in the history of boiler feeders.

This greater closing power permits the use of a larger valve opening with the same size float. As a result, the No. 47 Safety Feeder, (which has the same dimensions, hook-up and price range as the former No. 37) is now capable of handling boilers up to 5000 square feet capacity.

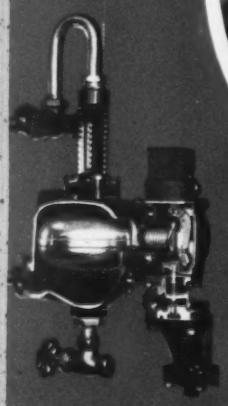
The same improved valve mechanism is also used in the new No. 51 "Big Brute." It replaces the former 30-S and 30-L Safety Feeders and takes care of all boilers above 5000 square feet capacity.

So there you have a simplification of the McDonnell line—two feeders to take care of all sizes of boilers, either of which can be ordered with low water cut-offs, as No. 47-2 and No. 51-2, to handle oil-fired or stoker-fired boilers.

Along with this big improvement and simplification of the McDonnell Safety Feeder line, the McDonnell Low Water Cut-off has been greatly simplified. One time-tested cut-off unit now takes care of all sizes of boilers. It can be used either with or without the quick-hook-up fittings as illustrated opposite.

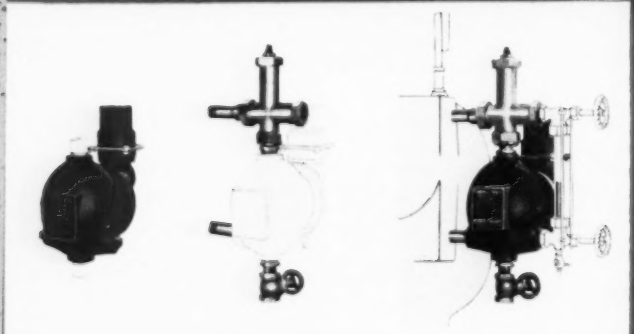


The new No. 47 takes the place of the former No. 37, but has more capacity due to the new valve construction. Use it on all boilers up to 5000 sq. ft. capacity. For automatic jobs use No. 47-2 — the combined feeder and switch.



**Proved by More than a Year's Service—**

Eighteen months ago we put into the field, test units of this new, powerful "Straight Thrust Valve Action." Several of these advance models were under continuous day and night service on process boilers. Others were used for standby tests. The results have been so outstanding that we have (at great re-tooling cost) adopted this Straight-Thrust-Valve-Action for our entire line of cool-feed-valve safety feeders. All parts are die-formed preventing mis-alignment.



**No. 60-A + No. 59 Fittings = No. 60-B**

No. 60-A Low Water Cut-off without quick-hook-up fittings for use with 1-in. equalizing pipes on boilers of any size.

Simply add these (No. 59) fittings to the No. 60-A and you have the No. 60-B shown below.

No. 60-B designates the No. 60-A Low Water Cut-off equipped with quick-hook-up fittings.

*Write for May 1934 Condensed Catalog*

It contains all essential facts, data, and prices covering the McDonnell line. Now is the ideal time to become posted on the new features.

McDONNELL & MILLER, 1306 Wrigley Bldg., Chicago

# McDONNELL
## Boiler Water Level CONTROL

"Doing One Thing Well"

# SUPPLY NEWS

## *Month's Developments among Manufacturers, Wholesalers and Salesmen in All Sections*

### New England Plumbing and Heating Wholesalers Meet

The Plumbing and Heating Wholesalers of New England, Inc., held their spring convention at Oyster Harbor, Monday, May 21, with a good attendance. Topics of vital importance to the plumbing and heating industry were discussed.

### Galvanized Range Boiler Manufacturers Join Plumbing Code

The manufacturers of galvanized range boilers have been accepted under the Plumbing Fixtures Code No. 204 by the NRA and the manufacturers operating under that code.

In accepting this code, however, the galvanized range boiler industry did so with the stipulation that it would ignore completely Article 8, Section 7, pertaining to a 5 per cent preferential price, as it is believed by this industry that such a preferential can become harmful to the best interests of all concerned.

The individual filed published prices of the range boiler manufacturers will be their extreme net prices and it is their belief that market stabilization will be more successful by the elimination of any preferential discount.

### Bon-Air Radiator Corp. Purchases Concealed Radiation Corp.

Recent purchase of the Concealed Radiation Corporation of Bridgeport, Conn., by the Bon-Air Radiator Corporation of Boston has been announced by C. Arnold Hall, president of Bon-Air. By the terms of the purchase, Bon-Air takes over all assets of the Concealed Radiation Corporation—including cash, patent rights, licenses and machinery. All machinery and equipment is being moved from the plant of the Bridgeport Brass Company of Bridgeport to the Bon-Air plant at Somerville, Mass.

### Submerged Water Heater Manufacturers Will Continue Cooperation

Now that their Code of Fair Competition has been approved, the Submerged Water Heater Manufacturers' Association comprising fourteen Chicago firms, will continue the co-operative movement which was inaugurated last fall between their association and the master plumbers of Chicago in the sale and installation of submerged water heaters. The manufacturers who are members of the association are as follows: Bell & Gossett Co., Ferguson and Lange, Olson-Kehl Co., Triad Mfg. Co., Accurate Boiler and Repair Co., Water Tube Boiler Company, General Heater Company, Parkinson Heater Company, Wolff Boiler Repair Company, Guaranteed Boiler and Welding Company, Grand Crossing Boiler Works, Carl Lindbeck Company, Johanson Water Heater Company, and Atlas Water Heater Co.

### Has Purchased Manufacturing Equipment and Engineering Co.

International Engineering Works, Inc., of Framingham, Mass., has just announced that it has purchased the equipment and the inventory of the Manufacturing and Engineering Company of Framingham and will continue to operate the business under the direction of the same manufacturing organization, and under the name of the Meeco Division of International Engineering Works, Inc.

### Taylor Allderdice Called by Death

Taylor Allderdice, formerly president of the National Tube Company of Pittsburgh, Pa., died Sunday, May 20, at his home in Squirrel Hill in that city in his 71st year. Mr. Allderdice began his business life as a bank messenger in Philadelphia. In 1881 he came to Pittsburgh and obtained a job as steel rail driller. After working twelve hours a day in the steel mills for several years he quit and attended Lehigh University. Later he returned to Pittsburgh and rose rapidly in the employ of the National Tube Co. until he was elected president in 1926. Two years later, in 1928, he retired from business. His wife, two sons and four daughters survive him.

### Andre Mertzanoff Dies in Paris, France

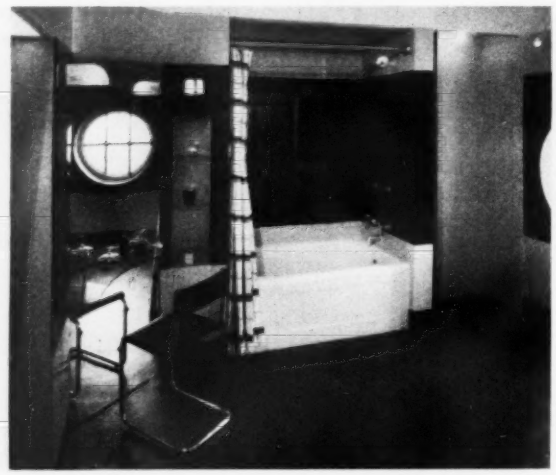
Andre Mertzanoff, formerly vice president and general manager of the American Radiator Company of New York City, died at a hospital in Paris, France, on Thursday, May 17. Mr. Mertzanoff joined the American Radiator Company in 1914 as an engineer, and in 1925 was placed in charge of the newly established planning and research department. Three years later he was made vice president and general manager of the company. He resigned in 1929 to devote his time to personal business affairs. His wife died last year.

### Chase Brass and Copper Company Opens Chase Tower

The Chase Brass and Copper Co. of Waterbury, Conn., on May 15 held a formal opening of its new offices in New York City. These offices cover five floors in the building at 10 E. 40th Street, the 44th, 45th, 46th, 47th and 48th floors, and the building was on this occasion given the name of the Chase Tower. The 44th and 45th floors contain the offices of the Chase Brass and Copper Co. and its affiliated and subsidiary companies, including the American Brass Co., the Erskine Radiator Division and the Consolidated Safety Pin Co. The 46th and 47th floors contain plumbing displays and many other displays of specialty products. The 48th floor contains 18 different rooms for the display of lighting fixtures in their normal environment. Built upon the highest

ground in mid-Manhattan, Chase Tower is 632 feet high and is one of the newest and highest skyscrapers in the city.

Among those in attendance at the formal opening were members of the New York Chapter of the American Institute of Architects, members of the New York Chapter of the American Institute of Decorators; E. T. Stannard, president, Kennecott Copper Corp.; F. S. Chase, president, Chase Brass & Copper Co.; Rodney Chase, assistant secretary, Chase



**One of Chase Brass & Copper Co.'s plumbing display rooms in Chase Tower in New York City**

Brass & Copper Co.; Earl F. Copp, general manager, Chase Brass & Copper Co.; Roland Chase, assistant general manager; A. A. Ahlf, sales manager, heating products division; H. F. Hutzel, general manager, heating products division; Richard F. Bach, Metropolitan Museum; Isaac Liberman, president, Arnold Constable & Co.; George Simon, Franklin Simon & Co.; John Slater, representative of the Fifth Avenue Association, New York.

## Mueller Brass Company Ends Agreement with Toledo Concern

The Mueller Brass Company of Port Huron, Mich., has just announced that the working agreement, which has existed with the Electric Auto-Lite Co. of Toledo for the last two years, has been terminated. The ending of this agreement terminates an arrangement which was made to serve a definite purpose for which no longer any reason exists, according to O. B. Mueller, president of the company. The Mueller Brass Company is employing a large force and its officials are looking to the future with confidence. Streamline is showing a steady increase, even though there has been comparatively little new building so far this year.

## Charles Millar & Son Co. Elects Officers

Charles Millar & Son Co. of Utica, N. Y., recently held its annual meeting and elected the following officers for the ensuing year: President, Charles Millar; first vice president, D. S. Howard; second vice president, R. U. Sherman; secretary, William Girvan; treasurer, A. H. Dobson. The members of the board of directors are L. D. Fowler, W. R. Jones and the officers.

## Represents Manufacturers at New York

H. H. Becker, manufacturers' representative handling plumbing, steam and mill supplies at 103 Park Avenue, New York, announces that beginning May 1 he is carrying on business under the above name. On that date the partnership of Becker & Hein was dissolved. Mr. Becker is representing the following companies: Abram Cox Mfg. Co., Frick-Reid Mfg. Co., General Ceramics Co. and The Keeney Mfg. Co. J. A. Quinn is associated with H. H. Becker.

## Represents Hedges-Walsh-Weidner Company

Continuous Sales Corporation, with warehouse and office at 21-15 Fifty-first Avenue, Long Island City, N. Y., will act as manufacturers' representative for the Hedges-Walsh-Weidner Company of Chattanooga, Tenn., and will carry a complete stock of its cast iron soil pipe, fittings, range boilers, storage tanks and specialties, according to announcement issued by A. E. Cohen, president and sales manager of Continuous Sales Corporation. This concern is also representing the Conemaugh Iron Works, Lincoln Niagara Corporation, Chicago Pottery Company, Lawson Mfg. Company, and Phoenix Brass Fittings Corporation.

## Appoints Three New Sales Representatives

The American Foundry & Mfg. Co. of St. Louis, Mo., has recently appointed three new sales representatives as follows: J. L. Jacobson, formerly with the Reading Iron Company, has been placed in charge of sales. George Taylor has been appointed sales representative in Indiana territory with headquarters in Indianapolis, and W. A. Ries will do promotional work in St. Louis and vicinity.

## Appointed Sales Representatives In Connecticut

EverHot Heater Sales Company of Detroit, Mich., has just announced the appointment of E. R. Clement, Inc., 1414 West Broad Street, Stratford, Conn., as its representatives in Connecticut territory. This concern consists of E. R. Clement and R. V. Thomas. These two men have a wide acquaintance among the jobbers of plumbing and heating supplies in that territory, because they have been very active in allied fields for some time.

## June 14 is Trade Group Meeting Day in Los Angeles

The Trade Groups Meeting Day of the Credit Congress of Industry will be held Thursday, June 14, in Los Angeles, in connection with the thirty-ninth annual covention of the National Association of Credit Men, which will be held this year at the Hotel Biltmore in Los Angeles, Calif., June 11 to 15, inclusive. The Trade Groups organized for the Credit Congress of Industry have scheduled all day programs around the broad aspects of sales and credit administration, with special emphasis in each program upon those subjects or problems which are of particular significance to each trade. These meetings have for their purpose the improvement of credit operations, and the development of cooperation and coordination of effort in sales and credit work. It is expected that every business executive will derive benefit from attending the Group Meeting of his trade associates. C. W. Dittmar of Crane Co., Los Angeles, Calif., is chairman of the Plumbing and Heating Group.

## Michigan Chapter, A. S. H. V. E., Holds Annual Meeting

The Michigan Chapter of the American Society of Heating and Ventilating Engineers held its annual meeting and election of officers on Wednesday, May 16, with an attendance of about 60 members. The meeting followed an afternoon of golf and baseball at the Meadowbrook Golf Club, near De-

# PERFECTLY TINNED ALL THE WAY AROUND ★

Re-heat a Chase sweated joint. Pull the fitting off before the solder has a chance to cool—and you'll see an unbroken coating of solder completely covering the end of the tubing. That's your customer's protection against leaks. Even 5,000 lbs. pressure can't force water through a Chase sweated joint!

• • •

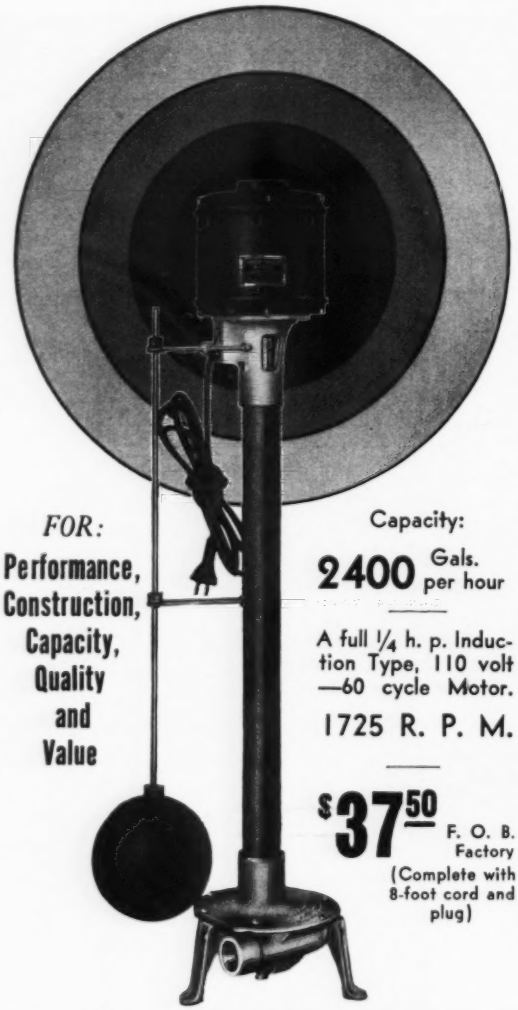
SEE how the solder flowed completely around the part of the tube that was sweated into the Chase Cast Tee, making a perfect joint. And speaking of Tees, Chase now makes *two* kinds—the Cast Tee that the copper-tube-man is lifting and the Saddle Tee shown in the lower right-hand corner of the photograph. It's just a matter of individual preference which you use.

*Good brass and* CHASE *copper products*

## CHASE SWEAT FITTINGS

CHASE BRASS & COPPER CO.—Incorporated
WATERBURY, CONN.

*It's A HIT!*



*FOR:*
**Performance, Construction, Capacity, Quality and Value**

Capacity:
**2400** Gals. per hour

A full 1/4 h. p. Induction Type, 110 volt —60 cycle Motor.

1725 R. P. M.

**$37.50** F. O. B. Factory
(Complete with 8-foot cord and plug)

# The *New* OBERDORFER
*Model B-2400*

# SUMP PUMP

1. All-Bronze, Rust-Proof.
2. Stainless Steel Shaft.
3. Pump: Centrifugal Design with Open Type Impeller.
4. Oil-less Bearings. No Further Lubrication Necessary.
5. Large Inlet Under Pump Protected by Non-Plugging Screen.
6. Outlet Tapped for Standard 1" Fittings — Easy Connection to Pipe or Hose Line.
7. Automatic Control: Enclosed Switch Positive Type Actuated by Oversize Ball Float Connected to Control Rod with Adjustable Stops.
8. Capacities:

| Height | Weight | Gallons per hour— | | | Head in Feet | |
|---|---|---|---|---|---|---|
| | | 1' | 5' | 10' | 15' | 20' |
| 40" | 65 lb. | 2400 | 1900 | 1500 | 900 | 400 |

*Write for Attractive Trade Discounts*

**M. L. OBERDORFER BRASS CO.**
2309 Thompson Road Syracuse, N. Y.


troit. The election resulted as follows: President, G. D. Winans; vice president, A. C. Wallich; treasurer, R. K. Milward; secretary, W. F. Arnoldy; board of governors: H. E. Paetz, Edward Glanz, John Kilner and Frank Feeley.

Following the meeting the golf committee distributed prizes to the following winners: W. H. Olds, Eddie Anderson, H. E. Paetz, A. A. Emrick, George Cummings, F. Connell, F. Feeley, H. E. Paetz, W. Hampton and F. Marzolf.

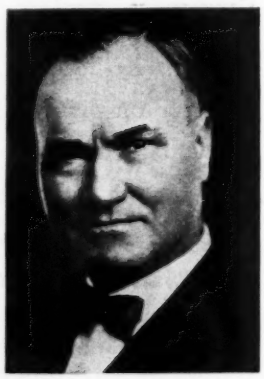
## Ontario Chapter, A. S. H. V. E., Elects Officers

The Ontario Chapter of the American Society of Heating and Ventilating Engineers held its annual meeting at the Engineers Club in Toronto, Ontario, May 15, with 37 members in attendance. After dinner the election of officers was held with the following result: President, W. R. Blackhall; vice president, M. W. Shears; secretary-treasurer, H. R. Roth; board of directors: J. S. Paterson, T. McDonald, G. A. Playfair and W. P. Boddington.

## E. B. Hauser Honored With Dinner

E. B. Hauser, manager of the Chandler Supply Company's branch at Kansas City, Mo., will soon move to Cedar Rapids, Ia., where he will be connected with the Chandler Supply Company at its general office in an executive capacity. This change moved his many friends in the trade to give Mr. Hauser a testimonial dinner, which was held on Saturday, May 5. Forrest Dodds of the American Radiator Company acted as toastmaster on this occasion, and all present were unanimous in expressing their regret in losing Mr. Hauser's companionship and in wishing him success in his new and more responsible position. Those attending the dinner were: Ray Chandler, Forrest Dodds, William Talbott, Charles Russell, George H. Clay, Jos. Childers, E. H. Graham, I. A. Phillips, K. A. Underwood, John Smith, Howard Painter, George W. Allan, John C. Allan, Fred Burns, H. Curfman, B. A. Hawk, W. C. Green, Jack Sheehan, William Russell, Virgil Ferguson, Edward Harbordt, Albert Evans, Frank Scoles and Daniel Lacy.

## Joseph A. Waddell Called by Death



Joseph A. Waddell

Joseph A. Waddell, western representative of the Spencer Heater Company of Williamsport, Pa., died suddenly in St. Louis, Mo., on Saturday, April 28, while in that city on business. Mr. Waddell was born in Staunton, Va., 56 years ago. He received his B. S. degree in mechanical engineering with honors in 1900 and his M. E. degree with distinction in 1902, from Virginia Polytechnic Institute, and was later for some time instructor in mathematics and mechanical engineering in that institution. He was chief engineer of the Spencer Heater Company from 1903 to 1917 and again from 1927 to the time of his death. In 1933 he was placed in charge of sales for the western district with offices in Chicago. He was responsible for the development of several lines of the Spencer Heater Co.'s products. During the World War Mr. Waddell's engineering ability was utilized by the Emergency Fleet Corporation, where he was in charge of ordering boilers for all the ships being built at that time. His wife, a son and a daughter survive him.

## Western Trade Golfers Open Season

The Western Trade Golf Association held its first tournament of the season at Park Ridge Country Club, Park Ridge, Ill., on Thursday, May 17, with a good attendance. The winners in the tournament were:

Class A and B.—First prize, Ira Sopor, with net 76; second prize, M. G. Henderson, net 76.

Class C.—First prize, D. C. Showers, net 67; second prize, Tom Callaghan, net 74.

Class D.—First prize, Dick Cooper, Jr., net 73; second prize, William Hoier, net 75. Blind bogey was won by J. J. Phillipi.

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## The P and H Golfers of New York Meet at Wykagyl

The Plumbing and Heating Golf Association of New York City had its first meeting of the season at Wykagyl Country Club, New Rochelle, N. Y., on Tuesday, May 22. The tournament was attended by 37 members and guests. The winners of the day were: First prize, Leo O'Neil; second prize, Fred Allen; third prize, Eugene Duklauer; fourth prize, Morty Smolka; fifth prize, C. H. Liebfried.

The season's schedule for the association is announced as follows: June 27, Upper Montclair Golf Club; July 26, Oakland Golf Club; August 22, Shackamaxon Golf Club; September 18 and 19, Buckwood Inn, Shawnee on Delaware, and October 16 Tamarack Country Club.

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## Southwestern Trade Golfers Open Season

The Southwestern Trade Golf Association of Kansas City, Mo. and Kans., held its first tournament of the season on Wednesday, May 9, at the Meadow Lake Golf and Country Club. The winners of prizes were:

In Class A: 1st., Carl Smith, 76—7—69; 2nd., C. E. Harris, 84—8—76; 3rd., W. O. Widner, 92—14—78.

In Class B: 1st., F. T. Smith, 90—18—72; 2nd., I. L. Roark, 90—17—73; 3rd., George Jorgensen, 95—16—79.

Birdies: Carl Smith, 4; Dan Foley, 2; C. E. Harris, 1.

Dinner was served at 6 o'clock, and this was followed by the annual meeting, at which officers were elected as follows:

President, C. E. Harris; vice president, L. L. Graves; secretary and treasurer, F. O. Piepenbring; handicapper, W. O. Widner; board of directors: W. J. Liggett, Walter Wiedeman and John Karges.

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## N. E. Metal Products Golfers Open 1934 Season

The New England Metal Products Golf Association held its first tournament of the season on Thursday, April 26, at the Charles River Country Club, Newton, Mass., with 40 golfers in attendance, including a number of invited guests.

The day was fairly warm, and the course in good condition, considering the early date in the season. Eighteen holes were played both in the morning and in the afternoon.

The prize-winners in the morning were: First, Wm. S. Earle, 77 net; second, F. A. Monroe, 80 net; third, John Cronin, 82 net; fourth, M. G. Chamberlin, 85 net.

In the afternoon the prize-winners were: First, William Taylor, 86 net; second, E. B. Lane, 88 net.

Luncheon was served at noon and an excellent dinner in the evening in the clubhouse.

The golf committee planned to arrange for two tournaments during May, one of these at Oyster Harbor in connection with the spring meeting of the Plumbing and Heating Wholesalers of New England, Inc.


Check the Exclusive Features that make this Master Tank

*Easier to*
**SELL**
**INSTALL**
**and**
**SERVICE!**

FEATURES

Longer flow of sewage in horizontal tank insures better septic action.

Improved top intake keeps baffle clear—prevents clogging.

Intake extends above ground—provides fresh air to house stack. Liquid seal in tank prevents escaping gases.

No other trap or vent necessary.

T-type intake allows tank to be set at any angle to house line.

Easier to install. Excavation is but little larger than tank itself.

Intake extension marks tank location—gives access to intake baffle without digging.

Sectional cover permits easy inspection of tank if ever necessary.

EASIER to sell—at a profit—because no one can offer these sure-selling features in any other septic tank—no one can offer a septic tank anything like this at cut prices. Your profit is protected.

Easier to install—because it requires less excavation—less work.

Easier to service—because the very possibility of trouble is minimized and the intake baffle is easily accessible without digging.

Sell a Master Septic Tank on every unsewered job. Make more money—keep your customers completely satisfied. Master Tanks are sold only through the plumbing trade. Ask your jobber for complete details and prices. Or write to—

SAN-EQUIP INC.
716 E. Brighton Ave., Syracuse, N. Y.

San-Equip
SEWAGE DISPOSAL

### New York Chapter A. S. H. V. E. Holds Annual Stag Party

The New York Chapter of the American Society of Heating & Ventilating Engineers held its annual stag party at the Villa Venice, 10 East 60th St., New York City, on Monday night, May 21. The 250 members and guests who attended were rewarded with a most enjoyable evening.

After a delicious fillet mignon dinner they were entertained for about two hours by the pick of Broadway's vaudeville talent. H. T. Richardson made an admirable master of ceremonies.

The arrangements were in charge of Alfred Engle, chairman of the entertainment committee, and W. E. Heibel, H. T. Richardson, H. W. Fiedler, H. G. Meinke and W. W. Timmis, who assisted him.

### New Jersey Golfers Meet at Suburban Country Club

The Plumbing and Heating Trades Golf Association of New Jersey held its second tournament of the season on May 10 at the Suburban Country Club near Jersey City, N. J. Harry Officer was host of the day and the course was in fine shape, all of which in connection with fine weather made it an ideal event. Twenty-four golfers were in attendance. The winners in the morning round were: First prize, D. B. McDonald; second, J. Powell. The guest prizes were awarded to R. S. Page and D. Snyder.

In the afternoon, 18 holes were played and prizes were won as follows: Class A, first prize, D. Sampson and F. Engelberger, a tie with 75 net; second prize, F. C. Stille, 78 net; third, A. Cashman, 80 net.

Class B: First prize, A. R. Gasewind, 77 net; second, S. H. Blackwood, 79 net; third, C. Peirce, 80 net.

The tie between Mr. Sampson and Mr. Engelberger resulted in the awarding of one leg on the cup to each of these prize-winners.

The net scores in the 18 hole afternoon game were as follows: D. Snyder, guest, 76; J. Powell, guest, 80; R. Foley, 102; C. Carlson, 121; J. T. Seifert, 90; F. L. Robinson, 84; J. Miners, 86; M. Swanson, 103; D. Sampson, 75; E. Spitz, guest, 86; A. R. Gasewind, 77; D. B. McDonald, 83; S. H. Blackwood, 79; C. M. Peirce, 80; A. B. Cashman, 80; F. Engelberger, 75; H. Officer, 84; R. S. Page, guest, 73; F. C. Stille, 78; H. Berla, 87; F. Gauster, guest, 86; J. M. Buday, 90; J. Wallwork, 77; W. H. Lee, no card.

## Obituaries—

### Gaylord C. Freeman

Gaylord C. Freeman, sales manager, Chicago Faucet Co., Chicago, died May 22, in his 43rd year. He had undergone an emergency operation for appendicitis a year ago and never fully recovered. During the intervening year, two additional operations were performed. His death occurred at the West Suburban Hospital, Oak Park, Ill., where he had been taken for treatment.

In the 13 years of his association with the Chicago Faucet Co., Mr. Freeman had built up a wide circle of friends not only in Chicago but through the entire industry. He attended many conventions and expositions as the representative of his company.

During the war, Mr. Freeman served in the famous Second division. He leaves a wife and two sons at his home, 1100 N. Harvey Avenue, Oak Park, Ill. Funeral services were held May 25.

### A. S. Deutsch

Adolphe S. Deutsch, president of the Monarch Aluminum Ware Co. of Cleveland, Ohio, died recently after several weeks' illness at the age of 81 years. He was the founder and for many years president of the Monarch Brass Co., which was succeeded by the Monarch Aluminum Ware Company.

### R. C. Flinder

Roscoe C. Flinder, who was connected with Jas. B. Clow & Sons of Chicago for the past 23 years, died suddenly of heart failure May 14 in his 52nd year. Mr. Flinder held the position of city sales manager for several years and for the past few years traveled for the company in northern Indiana. He is survived by his widow and a son, Arnold R. Flinder.

# Business Personals

FRANK LA BAW, sales and advertising manager of Standard Tank & Seat Co., Camden, N. J., is back on the job again after a serious illness and operation which confined him to the hospital for more than a month.

ROLLIN C. WILSON, direct factory representative for manufacturers of water and steam supplies, announces that he has moved his New England office to 261 Franklin Street, Boston, Mass. This office is in charge of Thomas A. Rockett.

ALFRED S. GRANZEN, formerly with the Brunswick-Balke-Collender Co., has been appointed sales representative for J. B. Wise, Inc., of Watertown, N. Y. Mr. Granzen will make his headquarters in this concern's eastern sales office, 41 E. 42nd Street, New York City.

PARKE H. HOLTON, associated for some years past with the firm of Evins F. Glore & Son, Inc., Grand Central Terminal Building, New York City, as vice president, announces his resignation from that company. Mr. Holton's plans for the future are not yet definitely settled.

IRA HODES, with offices formerly in the Chrysler Building, New York City, and representing in Greater New York territory the Youngstown Pressed Steel Co., Warren, Ohio; Milwaukee Valve Co., Milwaukee, Wis.; Milwaukee Flush Valve Co., Milwaukee, Wis.; American Tube Works, Somerville, Mass. and Kokomo Sanitary Pottery Co., Kokomo, Ind., announces the removal of these offices to 300 Madison Avenue. Mr. Hodes succeeds F. J. Mullen as representative of the Youngstown Pressed Steel Co. in Greater New York territory.

BEN H. SCHULZE has been appointed eastern sales manager of Kewanee Boiler Corporation of Kewanee, Ill., and will have supervision of this concern's 21 branches in that territory. Mr. Schulze has been district manager for the last two years, after serving as manager of the Detroit branch for 2½ years. He started with the Kewanee Boiler Corporation in its St. Louis branch about 15 years ago. He will continue to have his headquarters in the corporation's New York offices at 35-37 West 39th Street.

J. B. BERNHARD has been elected vice president of Waterfilm Boilers, Inc., which has just started in business at 154 Ogden Ave., Jersey City, N. J., manufacturing a complete unit including boiler and large tank connecting to copper coil for domestic hot water. Mr. Bernhard has had 40 years' experience in the boiler business, having served with the following concerns: Hart & Crouse Co., Utica, N. Y.; Abendroth Brothers, Port Chester, N. Y.; Thatcher Company, Newark, N. J.; Continental Heater Co., Dunkirk, N. Y. and others.

Water Systems

PUTTING
NEW ENTHUSIASM
INTO THE PUMP BUSINESS

BURKS OFFERS
AMAZING NEW PRODUCTS
WITH MORE PROFIT TO YOU

Burks

Burks Super-Turbine Pumps, of which tens of thousands are already in use, are sensational in performance, low cost and long service. Self-priming with no metal-to-metal friction, they are outstanding for efficient, economical use in domestic water supply systems.

You would be interested in the Burks franchise. It is exceptionally attractive. It offers you a product with distinctive sales advantages that give great leverage against competition. And it assures you of a profit that exceeds that of other makes as much as 50 per cent. Here is something you should investigate. Burks pumps and Burks liberality and fairness will put new life into your business. Write today for new catalog and bulletins descriptive of newly developed models, and home water supply systems, also our unusual proposition for distributors and dealers.

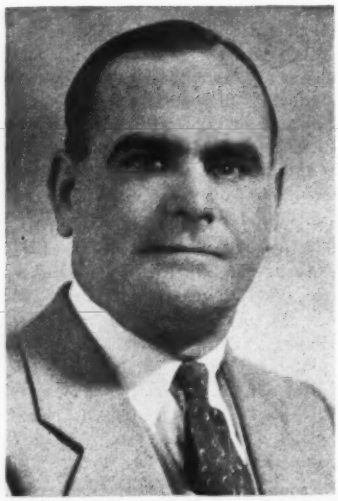
DECATUR PUMP COMPANY, DECATUR, ILLINOIS

Centrifugals

Pumps

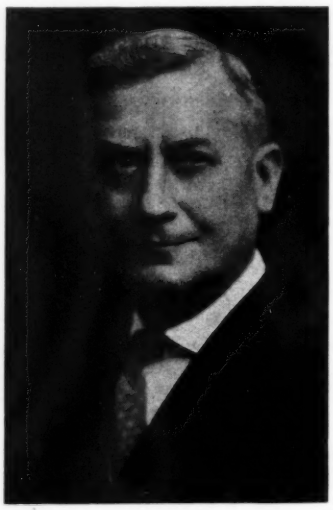
# THE TRADE

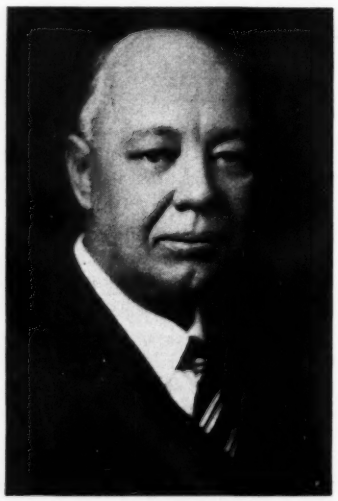
*News of what plumbing and heating contractors are doing the country over*



Charles Gawne, Chicago, Ill., elected secretary

George W. Frank, Buffalo, N. Y., elected vice president





H. O. Green, Tulsa, Okla., Re-elected treasurer

## Codes, Health and Large Attendance Feature N. A. M. P. Meeting

WASHINGTON has held the center of the stage all through the past year for all American business men. The national industrial recovery act and the NRA set up to administer it, has kept every eye centered on Washington and the 52nd annual convention of the National Association of Master Plumbers testified to that interest.

Delegates were present from all sections of the country, eager to get a clearer understanding of the plumbers' code which had just been signed and which a few days later would become effective. The result was that the days of the convention, May 29 to 31, were significant in bringing to these visitors information on the code which they could carry back promptly to their own state and local associates.

While interest in the code was dominant, the meeting provided a cross section of other subjects of present day importance to the plumber. The recent outbreak of amebic dysentery and the recognition by the medical profession of the part which defective plumbing played in this outbreak, were outlined and acted upon. With every licensed plumber in reality a health officer because of his recognition by state and local authorities as qualified to install plumbing properly, members were urged to take immediate steps to draw the attention of health and public officers to the urgent need for making sure that plumbing is installed only by qualified men.

Recognition of the public necessity of properly installed plumbing brought with it instructions by the convention that the national office make promptly available all over the country facts about the relationship between health and good plumbing. And alongside of this, was the recommendation that each individual master plumber take up the task of winning wider and quicker recognition of the need for good plumbing installed by trained men rather than by handy men.

The reports of the various standing and special committees presented a picture of the work of the National Association

and the manner of its adaptation to changing conditions.

President Robert J. Barrett in his capacity of president and of general chairman of the exposition and convention committee, had set a record of performance during the year, had provided an interesting program and had arranged for the entertainment and instruction of the visitors through the exposition and other activities. In that work, he freely acknowledged his debt to his official family and to the members in the District of Columbia who had worked to prepare for the convention and exposition.

The exposition brought out a display of new products for sale by and for the use of the plumbing dealer. These marked both the progress in style and efficiency which make plumbing products of increasing worth to the public, and also the development of other products along engineering lines through which the plumber can give customers more efficient and more economical services.

The preparation for a national convention is a large responsibility which requires both proper executive handling and loyal support by many committees. Mr. Barrett testified to that support and the smooth running of the convention and exposition backed up his words. Associated with him in the convention and exposition work were Frank Bentley, vice chairman; Joseph A. High, chairman; Francis C. Dorsey, A. R. McGonegal, J. H. McCarthy, William E. Miller, Arthur Snowden, William E. Wolff, all of Washington, Baltimore or nearby Virginia towns, as members of the divisional committee. The officers and directors of the Master Plumber Association of the District of Columbia included Arthur Snowden, president; Hervey L. Lauder, first vice president; Thomas E. Clark, second vice-president; William E. Miller, treasurer; Frank Bentley, secretary; J. W. McCormack Jr., sergeant-at-arms, Earle E. Stacy, John T. Collins and Joseph A. High, directors.

The various convention and exposition committees were as follows:

## CONVENTION AND EXPOSITION COMMITTEES

HOTEL COMMITTEE: Arthur Snowden, chairman; D. H. Alsop, vice chairman; F. Koehler, vice chairman; C. E. Rabbit, vice chairman; J. Bateman Jr., S. J. Denny, H. R. Eberly, E. J. Ewing, J. E. Heffron, J. E. Leins, J. W. McCormack jr., W. E. Owens, F. W. Quinter.

RECEPTION COMMITTEE: A. R. McGonegal, chairman; R. E. Carbauh, vice chairman; M. J. Colbert, vice chairman; E. Morris, vice chairman; S. Tapp, vice chairman; F. H. Amberger, J. L. Bateman Jr., O. W. Benson, E. H. Birch, J. A. Bronzonie, W. L. Barr, H. T. Chichester, E. F. Czarra, A. Devore, E. B. Eshleman, E. J. Ewing, R. H. Feltwell, R. W. Fisher, D. P. Fry, R. A. Gibb, W. B. Gifford Jr., J. M. Hall, T. Hannah Jr., J. E. Heffron, C. Kalstrom, J. A. Kane, R. H. Kenney, P. King, R. H. Lucas, J. E. McGolrick, E. Mallet, W. L. Marsden, W. D. Marshall, W. H. Merchant, H. C. Messner, R. M. Porter, F. W. Quinter, C. Sauderhoff, J. G. Schlosser, R. E. Simons, E. Stacy, H. H. Steck, E. E. Sutter, B. Vranich, J. G. Webster.

EXPOSITION FLOOR COMMITTEE: T. E. Clark, chairman; J. M. Beane, vice chairman; H. H. Brodie, vice chairman; J. E. Heffron, vice chairman; F. A. Kerr, vice chairman; D. H. Alsop, O. W. Benson, E. Czarra, W. Gary, S. J. Hughes. J. E. McGolrick, J. Sommers, E. E. Stacy, A. Stern, J. Wood.

PRINTING AND PUBLICATION COMMITTEES Francis C. Dorsey, chairman; E. M. McLain, Thos. Thaler, G. C. Wirth, C. Wachsmuth, C. Weaver.

BADGE AND TRANSPORTATION COMMITTEE: W. E. Wolff, chairman, V. E. Beagle, E. H. Birch, P. C. King, H. C. Messner.

STAGE COMMITTEES J. E. McGolrick, chairman; M. Hess, K. DeLawder.

ENTERTAINMENT COMMITTEE: J. H. McCarthy, chairman; E. J. Ewing, vice chairman; T. E. Clark, vice chairman; C. P. L. Moran, vice-chairman; J. C. Allen, A. H. Anadale, M. Bairstow, J. L. Bateman, J. T. Becker, O. W. Benson, W. A. Brownson, W. R. Bradley, L. C. Brockman, H. H. Brodie, C. B. Broome, E. B. Cameron, M. J. Colbert, E. Costello, E. Crouch, E. F. Czarra, K. DeLawder, S. J. Denny, A. Devore, G. Diegelman, T. P. Evans, R. W. Fisher, J. C. Flood, D. P. Fry, W. L. Gary, T. Hannah, Jr., M. A. Hess, R. Kenney, F. A. Kerr, J. E. Koehler, J. L. Kirkpatrick, H. L. Lauder, W. D. Marshall, J. E. McGolrick, W. M. McKinney, E. McLain, W. H. Merchant, T. D. Messner, H. C. Messner, W. E. Miller, E. Morris, M. J. O'Brien, W. E. Owens, F. Pollard, R. M. Porter, C. E. Rabbitt, J. G. Schlosser, C. V. Schreve, H. A. Scroggins, P. Sebastian, R. E. Simons, A. N. Smith, T. Sommerville, J. E. Sommers, E. E. Sutter, S. S. Streb, T. Thaler, C. Wachsmuth, C. Weaver, G. C. Wirth, D. Wilson, F. A. Wolf.

SIGHTSEEING COMMITTEE: William E. Miller, chairman; F. Koehler, vice chairman; C. E. Rabbitt, vice chairman; W. B. Haislip, J. H. Hall, F. G. Hess, J. W. Higdon, A. W. Kaldenbach, H. T. Leapley, M. Luria, M. F. Massino, H. E. Nau, H. E. Pruitt, D. A. Stansbury, E. W. Volland, W. F. Warner, J. L. Wege, W. G. Waters.

(Continued on Page 137)

**Board of Directors of N. A. M. P. Left to right: James Smyth, Spokane; Joseph Pate, Birmingham; Louis J. Petrie, New Orleans; James Shanahan, Norfolk; H. O. Green, treasurer, Tulsa, Okla.; Walter Williams, Wilkes-Barre; Frank Bentley, secretary, Washington; R. J. Barrett, president, Washington; John J. Calnan, vice president, Chicago; P. W. Donoghue, Boston; Jere Sheehan, St. Louis; George H. Drake, Buffalo; Charles M. Swinnerton, Los Angeles; Edward B. Kleine, Cincinnati; George H. Werner, Orange, N. J.**

This photograph, together with the view at the bottom of this page, was taken during the convention of the N. A. M. P. at Washington, D. C.

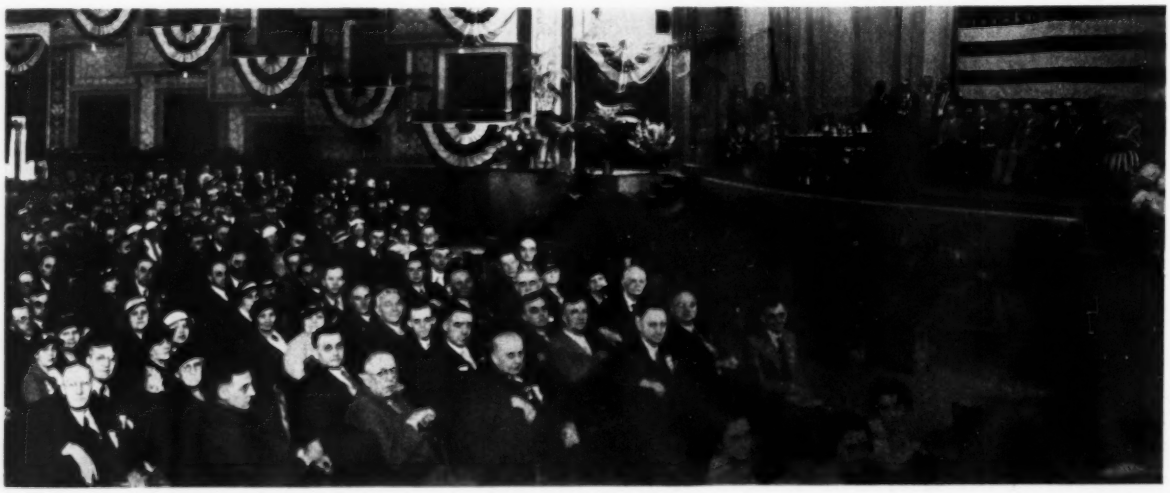
# Highspots of the Convention

WASHINGTON, D. C., May 31 (By Wire). Election of officers resulted in John J. Calnan, president; George W. Frank, vice president; Charles Gawne, secretary, and H. O. Green, treasurer. An ovation was extended to President Barrett which included a vote to give him a substantial testimonial for the great work he has done. A complete coverage of the code was made in the discussions by Hurley, Dusenberry, Vorhees, Kohler, Spillane, Drake and Zink.

The members selected Chicago as their next convention city. An apprenticeship study was discussed in preparation for business improvements. The standardization committee recommended joining the American Standards Association. This was approved. The scholarship committee is continuing college training. The electrical circuit grounds committee is studying the proposed electrical code. The special sanitary committee was authorized to study improvements and health relationships. The work of the bureau was praised and continued support was pledged to it. The selection of members of the code authority was announced. The personnel consists of Barrett, Calnan, Drake, Donoghue, Swinnerton, Sheehan and Kleine, representing the national association; Coefield, Burke and Garrett represent the journeymen's association. Rotker, Tuchmann and Boyland represent non-members. Green and Bentley were praised for their reports and the excellent statement which disclosed the good financial condition of the association despite heavy expenses.

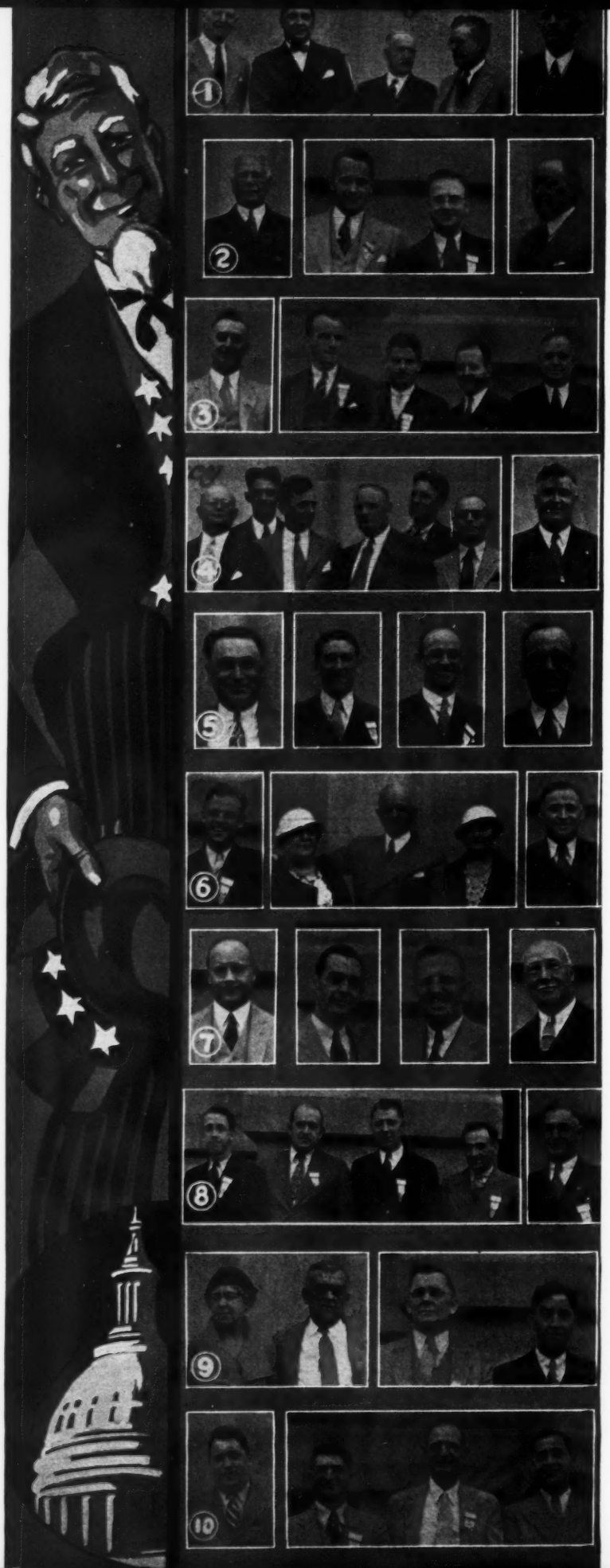
The convention was stirred by the Bundeson report and all plumbers were encouraged to become active in winning the recognition of the public and the health authorities so as to promote better health and plumbing relationships. Drake gave an excellent report of the work in getting answered the many code questions, although final rulings are awaiting the NRA sanction of the code authority organization. Kohler told of the problems involved in making the manufacturers' code effective in an effort to correct

(Continued on Page 138)



# At the N. A. M. P. Convention, Washington D. C.

Row. 1. H. P. Reger, state president, Chicago, Ill.; Hon. George H. Werner, national director, Orange, N. J.; Joseph Levene, Kansas City, Mo., state president; Rupert J. Weber, Chicago, Ill., state vice president.—Row. 2. William V. Hagan, Sioux City, Ia.; G. J. Palmer, state president, Ames, Ia.; J. W. Lundon, state secretary, Dubuque, Ia.; F. H. Pierson, Fairfield, Iowa.—Row 3. J. E. H. Dorsett, Lakeland, Fla.; J. H. Lutz, Jr., Harrisburg, Pa., Sub-Committee member on N. I. R. A. with state of Pennsylvania; William A. Schneider, Scranton, Pa., state president; George W. Frank, newly elected national vice president.—Row 4. John Corrigan, St. Louis, Mo., state treasurer; James Smyth, national director, Spokane, Wash.; Jere Sheehan, past national president, St. Louis, Mo.; Ed. L. Penfrase, New York, past national secretary.—Row 5. Thomas Sheehan, St. Louis, Mo.; Joseph W. Pate, Birmingham, Ala.; H. O. Green, national treasurer, Tulsa, Okla.; Edward Monteath, St. Louis, Mo.—Row 6. J. P. Harper, C. F. Church Mfg. Co.; W. A. Decker, Grand Rapids, Mich.; F. B. Lent, Saginaw, Mich.; A. A. Mitchell, Saginaw, Mich.—Row 7. T. Croxton Gordon, vice president, Richmond Foundry & Mfg. Co., Richmond, Va.; George T. Noyes, Presque Isle, Me.; Walter P. Bailey, president, state association, New Bedford, Mass. John E. Swensen, president, Mystic Valley Association, Mass.—Row 8. L. U. Noland, president, Noland Co., Newport News, Va.; W. T. Perry, Montgomery, Ala.; F. M. Quinlan, St. Petersburg, Fla.; E. B. Clayton, Denver, Colo., state president.—Row 9. Joseph Comer, Crane Co., Chicago; Jos. Wittig, Milwaukee, Wis.; Clara Wittig, Milwaukee, Wis.; Jacob Schuh, Milwaukee, Wis.; F. P. McCoy, state president, Fond du Lac, Wis.—Row 10. Frank Hackett, Brunswick-Balke-Collender Co., Chicago; Charles Gawne, newly elected national secretary, Chicago; Mrs. George Hill, Chicago; George Hill, Chicago



# At the Annual of the

Row 1. William Foley, president, New York State Association; Paul Baugh, Blaker Advertising Agency, New York City; John F. Rogers, Flushing, Long Island; Charles B. Nash, vice president, American Radiator Co.; A. F. Hirsch, past state president, Louisville, Ky.—Row 2. Benjamin Weil, president, Weil-McLain Co., Chicago; A. G. Farber, Baltimore, Md., with Revere Copper & Brass, Inc.; Lee F. Case, New York City, with Revere Copper & Brass, Inc.; George J. Dehn, president, Compound Injector and Specialty Co., Chicago. —Row 3. A. D. Burger, state president, Louisville, Ky.; R. E. Nellis, H. G. Turner, R. B. Nation, and J. F. Smith, all of International Nickel Co., New York City.—Row 4. K. A. Stephenson, Atlanta, Ga.; Benjamin J. Seckinger, state president, Atlanta, Ga.; W. R. Puckett, Atlanta, Ga.; A. J. Manning, Atlanta, Ga., state treasurer; J. C. Shumate, Noland Co., Atlanta; J. W. Pickelsimer, Atlanta; A. L. Kuntz, president, Portland, Ore., association.—Row 5. John L. Swafford, Oklahoma City, Okla., state president; E. J. Carney, assistant sales manager, Radiator Specialty Co., Charlotte, N. C.; R. B. Fulton, Radiator Specialty Co., Charlotte, N. C.; Bill Damon, Oklahoma City, state secretary.—Row 6. F. C. Hackett, Washington, D. C.; Mrs. Robert H. Pflug-Felder, Philadelphia; Robert H. Pflug-Felder, Philadelphia; Miss M. Gosch, Philadelphia, Pa.; A. J. Adshade, president of Denver, Colo., association. —Row 7. Carl H. Ingwer, president, Ridge Tool Co., Elyria, Ohio; Jack Carr, Domestic Engineering; W. C. Hanson, E. G. Schafer Co., Washington, D. C.; R. J. Welch, Lowell, Mass. —Row 8. W. Kent, New York; F. Q. Little, Baltimore, Md.; D. G. Cheek, Greensboro, N. C.; J. M. Sexauer, sales manager, Sexauer Co.; R. H. Holtzworth, Huntington, W. Va.—Row 9. Mrs. D. A. Mayfield, Jacksonville, Fla.; D. A. Mayfield, Jacksonville; W. H. Johnson, Huntington, W. Va.; D. V. Wickline, Princeton, W. Va.— Row 10. John Wilbers, Louisville, Ky., past state president; B. R. Donahue, Bardo, Fla.; J. A. Mann, Winter Haven, Fla., Earl Mann, Winter Haven, Fla.

# Fifty-second Convention N. A. M. P.

Row 1. S. A. Wander, president, Hercules Chemical Co., New York City; Mrs. W. E. McAndrew, Tampa, Fla.; Mrs. E. B. Kleine, Cincinnati, O.; Mrs. O. A. Waskow, Milwaukee, Wis. —Row 2. George Lewine, S. Lewine, and J. H. Lewine, all of Detroit, Mich.; G. T. Johnson and K. M. Buford, both of Bluefield, West Va.— Row 3. E. M. McLundie, president of Interceptor Corp., Michigan City, Ind.; John T. Kirwin, H. J. Noqrd, W. F. Cassidy and Joseph O. Stapf, all of Albany, N. Y.—Row 4. Robert S. Clarke, Jr., of Ruud Mfg. Co.; S. G. Gaillard, A. H. Goepel and L. G. Robinson, all of Scovill Mfg. Co., Waterbury, Conn.; T. W. Mullins, Bronx, N. Y.—Row 5. Henry J. Ritter, Buffalo, N. Y.; F. R. Drake, C. W. Seeley, J. W. Dalleywater and B. W. Erk, all of American Brass Co.—Row 6. Clayton Lee, Houston, Tex.; R. G. Thomas, San Antonio, Texas; W. H. Kuhn, Dallas, Texas; Felix Wahrmund, San Antonio, Texas, and William Wilby, Selma, Alabama.—Row 7. W. F. Clucas, Buffalo, N. Y.; R. D. Stephens, Washington, D. C.; L. C. Coombs, sales manager, Chicago; P. F. Clarke, Pittsburgh, Pa. and George H. Derbyshire, Philadelphia, all of Imperial Brass Mfg. Co.—Row 8. O. A. Waskow, Milwaukee, Wis.; Wray M. Scott, state president, Omaha, Nebraska; John A. Anderson, Omaha, Nebraska; Arthur Snowden, president, Washington, D. C., Association; M. R. Colbert, hotel committee, Washington, D. C.—Row 9. Henry E. Longley, Wilmington, N. C., past national president; I. H. Clark, F. J. Wilson, W. A. Blessed and J. R. Wightman all of Stream Line Pipe Fitting Co., Port Huron, Michigan.—Row 10. H. F. Clucas, St. Louis, Mo.; Fred Thompson, sales manager, and William G. Brewton, both of Dole Valve Co., Chicago; E. B. Grady, Concord, secretary North Carolina Association of Master Plumbers, and R. C. Hunt, St. Louis, Mo.

Row 1. E. Lyell Gunts, advertising manager, William A. Webster, director of field engineering, Walter H. Deale, district manager, all of May Oil Burner Corp., Baltimore, Md.; William C. Groeniger, Columbus, Ohio.—Row 2. John Ericson, American Sanitary Mfg. Co., Abingdon, Ill.; L. J. Womble, L. P. Paschall and M. G. Jobe, all of Durham, N. C.—Row 3. H. C. Day, Joseph A. McKenzie, M. K. Douglas, F. A. Smythe, J. J. Curry and H. H. Chaplin, all of American Radiator Co.—Row 4. Robert Dick and Robert Ziegfeld, both of Lead Industries Association; Mr. and Mrs. Robert O. Stickles, Hedges & Bros., Newark, N. J.—Row 5. C. A. Wagner, Washington, D. C.; W. J. Tendollen, Kohler, Wis., and H. H. Held, Philadelphia, all with Kohler Co., Kohler, Wis.; William Brookman, Chicago, Illinois, state secretary.—Row 6. Oscar Andersen, sales manager, Kainer Co., Chicago; Mr. and Mrs. William Haas, Dayton, O., and Mrs. G. F. Peters, Toledo, O.—Row 7. A. Platt, W. F. Ebner and S. George Arnone, all of Bronx, N. Y., George P. Bowdren, Hempstead, Long Island, and George A. Lucke, Baltimore, Md.—Row 8. M. J. Connors and J. C. Chaffe, both with Republic Steel Co., and J. T. Ellis and John E. Jacob, both of National Radiator Corp.—Row 9.—C. L. Crouse and Huber Seltzer, both of National Radiator Corp.; William Adams, Chicago, and William Gordon, Chase Brass & Copper, Inc.—Row 10. F. A. Perkins, state plumbing inspector, George A. Miller and Frank Koenig, all of Louisville, Ky., and W. H. Carson, Danville, Ill.

SALES PROMOTION COMMITTEE: J. A. High, chairman; J. M. Beane, O. Benson, A. P. Bovello, H. H. Brodie, C. B. Broome, J. P. Burke, T. E. Clark, M. J. Colbert, J. T. Collins, R. W. Corridon, E. Costello, K. DeLawder, F. C. Dorsey, T. P. Evans, J. C. Flood, I. Freund, W. L. Gary, G. W. Hanes, F. A. Kerr, H. L. Lauder, E. E. Stacy, A. J. Tholl.

PUBLIC HEALTH AND SAFETY COMMITTEE: Samuel Tapp, chairman; P. J. Baur, W. E. Bookhultz, A. B. Clarke, J. T. Collins, W. M. Finnacom, J. W. Humphrey, H. E. Huntsberry, F. G. Jackson, T. Leadbetter, G. V. Lucas.

REGISTRATION COMMITTEE: J. C. Flood, chairman; G. I. Anderson, A. W. Lyles, C. T. May, E. V. McKenney, P. Monaco, W. J. Mooney, D. J. Murphy, H. E. Pruitt, P. J. Quigley, J. M. Stevens, R. C. Sowerbutts, G. F. A. Stutz, H. A. Tapscott, F. Wall.

The sessions as well as the exposition were held in the big Washington auditorium, within a few steps of the White House. The opening session found the big hall comfortably filled when President Barrett sounded the gavel which brought the 52nd annual convention into existence. Melvin C. Hazen, president of the board of commissioners of the District. made the welcoming address and Vice President Calnan responded in a brief talk in which he referred to the progress made since the Washington convention of 42 years ago but acknowledging the credit which earlier leaders deserve for their part in insuring that progress.

## MRS. LISS SPEAKS FOR WOMEN

Mrs. Robert Liss, president of the Women's Auxiliary, was introduced by Mr. Barrett with an expression of appreciation for the inspiration given by the auxiliary. She referred to the leadership of her predecessors, told of the plan of the auxiliary to help make the public more conscious of the importance of sanitation, and pointed out the aid now being given in helping plumbers' daughters through college.

Mrs. E. D. Hornbrook, of Kansas City, Mo., widow of one of the best known leaders the association has produced, was introduced and showed her continuing interest in the association both in her remarks and in various hand-made gifts which she presented and in a musical, memorial service she supervised.

Past President Frank B. Lasette of New York, head of the Past President's club, who was attending his 36th consecutive national convention, introduced the past presidents present, all of whom spoke briefly in acknowledgment. These former chief executives were Frank J. Fee of New York; Samul Wilson of New Jersey; Henry E. Longley of North Carolina; Jere Sheehan of Missouri; George H. Drake of New York; P. W. Donoghue of Massachusetts and E. B. Kleine of Ohio.

The first morning was enlivened and enriched by many gifts to both Mr. and Mrs. Barrett, to Mrs. Liss and to Mrs. Hornbrook, by the members of the District of Columbia's association and its auxiliary. These testified to the appreciation felt for the services and sacrifices of these leaders during a strenuous year.

Patrick J. Hurley, secretary of war under President Hoover, and more recently acting as legal advisor to the N. A. M. P. on its code work, in an address recounted the important part which plumbing and plumbers have played in civilizations for centuries. He traced the definite development of plumbing as it exists today to the completion in 1842 of the Croton aqueduct which brought abundant water to New York City and required the development of a piping system to furnish fresh water and to carry away waste. From that point, the plumbing industry developed along its engineering and economic lines.

Mr. Hurley testified to the essential nature of plumbing in making possible American life as it exists today, plumbing permitting large cities, skyscrapers, large institutions, factories as well as comfortable homes. "The rarity of epidemics," he said, "in all of our cities, the prevention of the spread of disease notwithstanding the density of the population, bear silent yet eloquent testimony not only to the effectiveness of precautionary measures of medical science but also to the efficient work of skilled plumbers in their application of sanitary engineering."

The National Association of Master Plumbers, Mr. Hurley pointed out, is the oldest and largest continuing master craftsmen's organization in the world. Its membership of 15,000 employ from 95,000 to 100,000 journeymen and about 15,000 apprentices. "More than 94 per cent," said Mr. Hurley, "of all those engaged in the work of contract plumbing in this country, are through their local or state association connected with the N. A. M. P." The record of that association both in the securing of fair business treatment for plumbers but more especially in educational, apprentice training, standardization, engineering and in health regulation, were recalled by Mr. Hurley.

Russell G. Creviston, sales promotion manager of the Crane Co., Chicago, sketched the provisions of the national housing act which he feels offers the most direct form of relief bearing on our industry to develop from the emergency legislation of the past year. He showed the means by which it aims to ease the mortgage situation and to provide funds for building. He urged individual effort by all to support the act so that the whole industry would unite to give effect to President Roosevelt's plea for better housing conditions in America.

Telegrams were read from C. R. Crane and W. H. Picard of Oakland, Calif., expressing regret at their inability to attend.

Jere L. Murphy of New York reported for the standardization committee which he heads and which just a year ago had completed and secured the approval of a code by the N. A. M. P. The committee work now centers largely in large cities and particularly in New York City, where the American Society of Mechanical Engineering and the American Standards Association are located. He had answered many inquiries on codes and standardization and pointed out the dangers of over-standardization as a check to progress. He urged that more be done to make sure that qualified plumbers install plumbing. He said there is a tendency to sidetrack the plumber because the handy man offers a cheaper job but referred to the amebic dysentery outbreak as indicative of the penalty which is likely to follow. He recalled examples of years ago where plumbers had discovered the engineering deficiencies of fixtures which permitted cross connections.

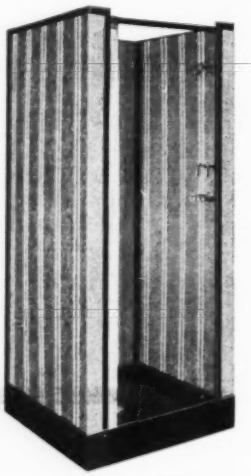
## APPRECIATION TO TRADE PAPERS

President Barrett concluded the first session with an expression of appreciation to the trade papers for their work in helping the plumbers through the past difficult year.

The second session opened with the report by Robert H. Pflug-Felder of Philadelphia, chairman of the aprenticeship committee. He told how his committee had set out to secure definite information on the apprenticeship situation and on the attitude of the master plumbers toward apprentice training. The questionnaire used had brought back opinions and facts from plumbers in 38 states and gave a good cross sectional view of the opinions on this problem.

This survey led Mr. Pflug-Felder and his committee to recommend that each local study how to meet apprentice needs with the recovery of business; that the employment of plumbers' helpers be curtailed and they be used as laborers for heavy work, not as junior mechanics; that the N. A. M. P. prepare a form for an intelligence test and apprentices accepted only after satisfactorily passing this test; that every local take part in vocational training work and see that it included training in bookkeeping; that a suggested minimum

Profits You Couldn't Make Before



*A Low-Cost Shower Cabinet for Cottages, Basements, Cabins*

Here's a tonic for lagging sales! The WEIS COTTAGER cabinet opens opportunity for sales—and profits—not ordinarily open to plumbers. It's low in cost, but it's a quality job, just the same. Ask us to tell you all about it

There's still time to get in on the WEIS Cooperative Advertising Plan if you work fast. If you are interested, send for details right away.

HENRY WEIS MFG. CO. INC.
602 Oak Street Elkhart, Indiana

rate of pay be $12 for apprentices for the first year, $14 the second, $16.50 the third, $20 the fourth and $25 for the fifth year.

Francis C. Dorsey of Baltimore reported as chairman of the conference committee, the work of which this year has been largely devoted to the code of fair competition. It had also worked on the question of the separation of mechanical contracts to put plumbing and heating as distinct contracts.

Richard J. Welch of Lowell, Mass., chairman of the scholarship committee told of its work which has been steadily carried forward and which is providing college training for sons of master plumbers.

H. O. Green, treasurer, delivered a complete report which showed in detail the finances of the association. It disclosed the success met in the past year, through economy and sound management in meeting the heavy expenses of the code program successfully. Mr. Green was complimented on the completeness and character of his work as treasurer. His report was supplemented to some extent by that of National Secretary Frank Bentley, who also showed how the association's funds had been conserved and used.

John Coefield, president of the United Association of Journeymen Plumbers and Steamfitters of the United States and Canada, told of the harmonious relationship with the plumbers, the comparative freedom from labor troubles in our industry, the excellent teamwork with the N. A. M. P. in the past year on the plumbers' code and pledged continued efforts to work harmoniously for the industry.

## Highspots—

(Continued from Page 132)

unfair practices. Spillane hopes for a wholesalers' code very soon. John H. Zink hopes same for heating contractors. Coefield reported more harmonious relationship in the plumbing industry than in any other. Resolutions were adopted correcting the condition whereby some employing plumbers still stay in the journeymen's union. Another resolution adopted calls for a conference with manufacturers requesting that there be included in advertising information in enlightening the public of the necessity of plumber installations. Still another resolution was adopted favoring the study of the electric code relating to the use of electrical wire for grounds. Another resolution adopted urges that the government acknowledge plumbing as a health measure. Also, the government is urged to adopt New Orleans code to govern the federal relief construction. Other resolutions were adopted suggesting fair trade practices covering bidding by contractors from outside localities; referring to new board the suggestions for manufacturers advertising; favoring the idea that each locality should study the apprenticeship question; favoring the idea that each locality should interest itself in vocational training; classifying ability relationship as a matter of state policy; referring to incoming board the question of whether or not to continue holding expositions with conventions. President Barrett and the board have recommended the discontinuance of expositions because of the great work involved.

Vorhees said that the construction code offered the opportunity to establish the plumbing industry, for the first time, as a great industry. Amended by-laws insure a more prompt payment of dues before recognizing membership. An acknowledgment of the effectiveness of the Washington office and staff, headed by Executive Secretary Hildebrand and Assistant to President Flentje was made. It was emphasized that the new plumbers' code is a chapter of the construction code and that plumbers must observe both.

The wage and hour provisions of the new code become effective June 4. Trade practices become effective later when the code authority is organized.

# Master Plumbers in Sixteen States Hold Annual Conventions

*Michigan, Alabama, Arizona, California, Connecticut, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana-Mississippi, New Jersey, North Carolina, Oregon, Tennessee and Virginia*

DURING May and late April sixteen state associations of master plumbers held their conventions. This unusual record results from two causes. The principal one was the desire to postpone state meetings until definite action was taken on the NRA plumbing contractors' code. The second reason was the advancing by one month of the date of holding the national convention.

DOMESTIC ENGINEERING presents in the following pages reports of these conventions gathered by representatives in each of those states. While this large number of reports necessarily forces the curtailing of the length of each, readers will recognize our effort to report fully the principal features of each meeting.

The major topic of discussion at each of the meetings was the question of the code. Those meetings early in the month preceded the signing of the code by President Roosevelt, while several of those reported, took place after the signing.

In addition, the official recognition of the relationship between good plumbing and the amebic dysentery outbreak was discussed at practically all conventions. Also the various housing projects, remodeling movement and government building program were principal topics of discussion. The men selected to lead these associations are:

### PRESIDENTS OF STATE ASSOCIATIONS

Edgar Lessenger, Boise, Idaho.
I. B. Skau, Hartford, Conn.
Joseph G. Hayes, Indianapolis, Ind.
D. A. Mayfield, Jacksonville, Fla.
Joseph W. Pate, Birmingham, Ala.
E. F. Lawler, Norfolk, Va.
W. F. O'Neil, Phoenix, Ariz.
John Milne, The Dalles, Oregon.
J. R. Lawton, New Orleans, La.
Ben J. Seckinger, Atlanta, Ga.
Edmund P. Ingram, Jersey City, N. J.
E. W. Wilson, Asheville, N. C.
A. D. Burger, Louisville, Ky.
F. C. Schilling, Jr., Los Angeles, Calif.
F. B. Lent, Saginaw, Mich.
Gustav Limberg, Memphis, Tenn.

**From left to right: George H. Drake, Buffalo, past president of N. A. M. P.; Joseph J. Crotty, vice president, Central Foundry Co., New York City; T. M. Hennessey of Oswego; Jere L. Murphy, past president of N. Y. State Association; M. F. Toomey, oldest master plumber in New York State, and W. F. Clucas of Buffalo—in the exhibit of the Lead Industries Association at New York State Master Plumbers' recent convention in New York City**

The keynote of the convention of the Alabama Association of Master Plumbers was: "More Modern Plumbing and Heating Facilities in More Homes in Alabama." The convention passed a resolution urging the state health department to adopt the National Plumbing Code as a guide to correct installations in Alabama, and it also recommneded that each county health unit appoint a plumber as deputy health officer.

At the request of manufacturers of plumbing materials, the California State Master Plumbers Association adopted a lengthy resolution, carefully defining the term "merchant plumber," for guidance in relations between the two groups. Meeting just after the code was signed, the members were given an exhaustive outline of the provisions of the code, and of the difficulties which have attended its passage. The California association shows an increase of around 600 members during the past year, bringing total membership close to 1,000.

The main features of the Connecticut convention were addresses and discussions on the Government Code of Fair Competition, Connecticut Master Plumbers' Co-operation with Gas and Electric Utility Companies of the State, and Air Conditioning.

The outstanding features of the convention of Florida Master Plumbers and Heating Dealers were an inspiring address on "Salesmanship" by Dean Matherly of the University of Florida, and President D. A. Mayfield's annual report, which showed an increase in membership of 800 per cent.

The high points of the Indiana convention were as follows: President Joseph G. Hayes' report for the past year, covering also his work as code committeeman for the N. A. M. P. Addresses by W. E. Price, president of the Central Supply Association; National Director E. B. Kleine, past president of the N. A. M. P.; John J. Calnan, vice president of the N. A. M. P.; Henry P. Reger, president of the Illinois Master Plumbers' Association; Charles E. Gawne, president of the Chicago Plumbing Contractors' Association, and Robert Dick of the Lead Industries Association.

Showing a substantial increase over last year's attendance, the 51st annual convention of the Kentucky State Association of Master Plumbers was held on May 7 and 8 in Covington. Prominent guests were Past National President Edw. B. Kleine, now a national director, and Past National Secretary Edward Frank. A. R. McGonegal, Chief Plumbing Inspector, Washington, D. C., discussed with the convention the dangers of cross connections and outlined the most prominent causes.

Meeting in Greensboro, N. C., for its 24th annual convention, the North Carolina Association of Master Plumbers

(as it will be called from now on) heard the news of the signing of the code by telegraph from Joseph G. Hildebrand, Executive Secretary of the N. A. M. P., while at lunch. The news was received with shouts and cheers. During the afternoon session of the convention, the members voted resolutions of enthusiastic congratulation to National President Barrett, and of complete accord with the code as signed, even though they were not aware of its final form.

The 33d annual convention of the New Jersey State Association of Master Plumbers, meeting in Atlantic City on May 18 and 19, had the unique distinction of entertaining National President Robert J. Barrett just after the signing of the code in Washington. Needless to say, the news was received enthusiastically by the two hundred members and delegates present, who listened with close attention to President Barrett's address, detailing the process of securing the code and the need for constant vigilance in enforcing it.

The main feature of the convention of the Virginia Associated Plumbing and Heating Contractors was the address by Robert J. Barrett, president of the National Association of Master Plumbers, in which he discussed the activities and the growth of this organization as well as the NRA plumbing code.

# Michigan Plumbing and Heating Dealers Meet at Grand Rapids

LIVE interest in association affairs, resulting to a large extent from the code developments of the past year, brought a large attendance to the 42nd annual convention of the Michigan State Association of Plumbing and Heating Dealers at Grand Rapids on May 8-9. The members were rewarded by informative discussions on the code led by Robert J. Barrett, of Washington, president of the National Association of Master Plumbers, E. B. Kleine, Cincinnati, past president, and by William A. Decker, state executive in charge of code work.

The meetings were conducted by Henry Kraker of Holland, president, and Howard Reed, Jackson, secretary. The new officers elected were headed by F. B. Lent, Saginaw, as president; Fred Stermer, Jackson, vice president; Howard Reed, Jackson, secretary for three years. The board of directors comprises William Ames, Flint; Charles Rolfe, Battle Creek, DeForest Benson, Owosso, and John Petersen, Grand Rapids.

Mr. Barrett recounted the hard work done in securing the code, ranging from the job of meeting the viewpoint of those members of other branches who favored distributing practices unacceptable to the plumbers, to the job of meeting the viewpoints of many government groups. He paid a tribute to the support given by his own official organization, by many of the state executives including Mr. Decker and by some members of other branches. The Florida executive, he said, had built up the membership from 33 to 360 out of a total of 420 plumbers in the state. He told of the cast iron soil pipe code and urged members to encourage the use of terra cotta pipe underground. This would aid in reducing building costs and meet the needs of the public for lower building costs. Mr. Barrett also explained some of the effects of the code on members, especially the necessity for keeping books and adequate records. The code can be amended and the national office wants suggestions for amendments.

Mr. Kleine participated actively in the meetings, showing the results of his long experience in association affairs. He outlined some of the many directions in which the national association has served its members. It has played a major part in making this country a leader in sanitation. He emphasized the importance of supporting the national association in its work of combating those outside influences which work against the established system of distribution. In all, Mr. Kleine told of a great many important services which the national association has given not only its members but all master plumbers

Interesting talks were given by a number of speakers including not only Mr. Decker but Rupert J. Weber, Chicago, vice-president of the Illinois association, who told of the amebic dysentery outbreak which had brought to plumbing official recognition as a major health factor. Various members of the state board of plumbing inspectors also spoke. L. A. Cornelius, president Wolverine Brass Works, Grand Rapids, discussed code developments and the importance of the plumber in the sale of plumbing products.

The committees in charge of convention activities were: Credentials: Sam Matthews, Lansing, chairman, Joseph Van Rossum, Grand Rapids; Peter Vander Weide, Grand Rapids; Sergeant-at-Arms: Peter DeWitt, Grand Rapids; Samuel Andrews, Ann Arbor; C. M. Rolfe, Battle Creek and Fred Hubner, Sturgis. Resolutions: Ed. Harrington, Detroit, W. J. Hughes, Bay City, De Forest Benson, Owosso. Auditing: F. B. Lent, Saginaw; Nicholas Hertel, Grand Rapids, and Ed. J. McAleer, Kalamazoo.

Local arrangements at the meeting had been well prepared under the direction of Peter Pipe, Grand Rapids, president, assisted by Joseph Van Rossum on registration; N. Hertel on program; Joseph Troske, entertainment, and Charles Fischer, on reception.

Among the resolutions adopted was one protesting the furnishing of liquor by outsiders which serve to keep members from the convention work; asking the national convention to be held in Grand Rapids in 1935 or 1936; protesting certain features of the manufacturers code relating to inadequate margins in retail selling prices; covering the appointment of a state code authority; changing the name to the Michigan State Association of Master Plumbers. Support was given for the increased use of lead, a talk on that subject being given by A. B. Dick, of the Lead Industries Association.

In a discussion of costs, Mr. Kleine pointed out from his experience that the contractor must have 50 per cent on his labor; that his normal overhead in normal times is 18 to 19 per cent; journeymen in normal times probably work about 75 per cent of the time and that if a truck is supplied, the cost runs from 25 to 29 cents per hour.

# Connecticut Master Plumbers Discuss Utility Co-operation

THE Master Plumbers Association of Connecticut held its forty-fourth annual convention in Meriden, Conn., May 9, with a good attendance. President I. B. Skau of Hartford presided, and his announcement that the membership of the association has been increased more than 100 per cent during the last twelve months was received with great enthusiasm. To show its appreciation of his efforts he was re-elected as were most of the officers who served with him during the past year.

The officers elected are: President, I. B. Skau, Hartford; first vice president, Stephen Miller, South Norwalk; second vice president, Winifield Holman, Danbury; financial secretary, J. M. Forger, Norwalk; recording secretary, Robert C. Davidson, Hartford; treasurer, George Wigglesworth, Naugatuck.

I. B. Skau and Robert C. Davidson were elected delegates to the National Convention.

President Bird of the Connecticut Power Company gave a fine informative address on "Co-operation between the Master Plumbers and the Gas and Electric Utilities Com-

panies." He went into the subject of merchandising and installing gas ranges and heaters, gas and electric refrigerators, etc., and he covered it most thoroughly. This co-operation in Connecticut has been very successful during the last two years. During 1933 it was responsible for the sale of $173,000 worth of appliances, and he expected that the sales in 1934 would amount to $250,000. Mr. Bird added that the above sums were far from being the total amounts as many transactions had taken place, of which he had no report.

Past President C. A. Hjerpe, chairman of the Joint Committee of Utilities and Plumbing Contractors, reported that the utilities companies have built up a sales organization which functions like clockwork, and he urged the master plumbers to avail themselves of the favorable opportunity offered by the utilities companies.

Jere L. Murphy of New York City was scheduled to address the convention but was unable to be present. James Walker of Waterbury, past president of the American Society of Sanitary Engineering, became his substitute and delivered a short address on "Protection against Contamination of Water Supplies due to Cross Connections."

I. B. Skau, Hartford
Re-elected President

Robert C. Davidson
Re-elected Secretary

H. P. Waechter of the York Ice Machinery Corporation delivered an address on "Air Conditioning," which was remarkable in its comprehensiveness, considering the time allotted to its delivery. He described the elements of an air conditioning installation and its operation. He also showed how estimating is done for various projects in air conditioning, with approximate costs on jobs ranging up to ten tons.

Robert T. Rock of Bridgeport thereupon conducted an impressive memorial service in honor of those members who died during the past year.

Robert J. Barrett and P. W. Donoghue, president and past president, respectively, of the National Association of Master Plumbers, addressed the convention chiefly on the subject of the forthcoming Code of Fair Competition for the plumbing trade.

Mr. Donoghue also reminded his hearers of the great opportunity, which the New Home Loan Corporation offers the plumbing trade by providing loans whereby property in need of repair can be put in good shape.

President Barrett stressed the necessity of setting up a Code Authority for the State of Connecticut. For this purpose it is ordered that the state be zoned and that 9 members be appointed to serve on the Code Authority.

A special convention committee, headed by Robert T. Rock, had divided the state into six zones, and the following plumbing contractors were appointed over them: W. T. Rafferty, Putnam; Harry J. Kennedy, New London; Howard Mahl, Hartford; James Lowe, Waterbury; Arthur Thorpe, New Haven, and R. T. Rock, Bridgeport. These six men will select three men, not members of the plumbing trade, to be added to their number, making nine as the complete membership of the Connecticut State Code of Authority.

The treasurer's report showed a healthy financial state with a balance of $2,398.53 on hand.

About 175 attended the convention, among them A. R. McGonegal of Washington, D. C., a past president of the American Society of Sanitary Engineering.

The committee in charge of plans for the convention was praised for its excellent work. It was headed by Past President A. A. Mills of New Britain.

The convention program came to a close with the annual banquet, held in Masonic Temple and attended by 250. It was followed by entertainment and dancing.

# Kentucky Master Plumbers to Continue Drive for Sanitation

MEETING in the Knights of Columbus Home in Covington, the 51st annual convention of the Kentucky State Association of Master Plumbers boasted a larger attendance than at last year's meeting. The following officers were elected to head the association during the coming year. President, A. D. Burger, Louisville; vice-president, John E. Kennedy, Ft. Mitchell; secretary, O. H. Mitzlaff, Louisville (re-elected). President Albert F. Hirsch presided, and presented the presidents of the various local associations; O. L. Bungenstock, Kenton-Campbell counties association; A. D. Burger, Louisville association; Wm. Moloney, Lexington association, and E. B. Whitehurst, Ashland association.

Past National President Edw. B. Kleine, accompanied by Past National Secretary Edward Frank and by Wm. Tillett, a director of the Ohio association, spoke of the work of the national office during the past year and said that it is closer to the membership than ever before.

Hon. Roger L. Neff, county attorney, Newport, spoke on the plumbing laws of the state, and Edward Kaiser of Louisville presented the report of the Joint Sanitary Board. After several members had urged the association to support the work of the board, the meeting voted $100 to keep the work of the board going.

Resolutions of sympathy were extended to the families of John J. Vogelpohl of Cincinnati, Jas. S. Cassedy of Boston, and Fred Hornung, Louisville. A resolution of appreciation for the co-operation of the members of the state board of health was also passed. Another resolution set the dues at $10 per year. A strong resolution supporting the national office in its code work was also passed, as was a resolution dealing with the grounding of electrical appliances on plumbing pipes.

President Hirsch appointed the following convention committees: Resolutions, John Zehnder, Louisville, Al Kruse, Newport, and Gilbert Norcutt, Henderson. Auditing Committee: John Kennedy, Covington, A. D. Burger, Louisville, and Frank H. Tice, Lexington.

Speakers included A. R. McGonegal, chief plumbing inspector of Washington, D. C., who urged the use of good materials and also traced the causes of cross connections to refrigeration equipment, soda fountains, swimming pools and drinking fountains. F. A. Perkins, plumbing inspector, State Board of Health, discussed the state's pure food and drug laws as they apply to plumbing.

H. G. Wilson, instructor at the Ahrens Trade School, Louisville, spoke on the necessity of education under the "New Deal," and urged master plumbers to give close attention to their business papers. Past State Presidents Zehner and Wilbers spoke on organization matters.

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# Arizona Master Plumbers Discuss Codes

THE Arizona State Association of Master Plumbers held its annual convention at Phoenix, Ariz., May 6, under the leadership of President W. F. O'Neil.

Charles M. Swinnerton of Los Angeles, member of the board of directors of the National Association of Master Plumbers, gave a very interesting and instructive address on "The Codes of the Plumbing Industry and Their Co-ordination."

All the officers were re-elected for the ensuing year as follows: President, W. F. O'Neil, Phoenix; first vice president, Henry Fliedner, Phoenix; second vice president, M. F. Kuhne, Prescott; treasurer, J. A. Sattler, Phoenix; secretary, George G. Doyle, Jr., Phoenix.

Instructive talks were given by President W. F. O'Neil on "Association Membership and Its Value to Your Own Business"; D. S. Horrall on "City and Rural Sanitation"; L. T. Dale on "Plumbing and Heating Codes"; W. A. Thomson on "General Business Conditions"; W. L. Greer on "Plumbing a Ding Bat," and E. J. Harrington on "Code Administration."

A state-wide drive will be started immediately to make the entire membership of the association 100 per cent paid up.

The legislative committee reported very favorably on a state code.

It was decided to hold the next convention on the first Saturday and Sunday in May, 1935, the place of the convention to be decided by the officers at a later date.

# Idaho Plumbers Elect E. F. Lessenger President

THE Idaho Master Plumbers' Association held its annual convention at Boise, Idaho, May 5, with an attendance of 35 members, and elected the following officers for the ensuing year: President, Edgar F. Lessenger, Boise; vice president, A. J. Campbell, Twin Falls; second vice president, Fred Hartenbower, Caldwell; secretary-treasurer (re-elected), Ray C. Killian, Pocatello.

James Smyth of Spokane, Wash., a member of the board of directors of the National Association of Master Plumbers, represented this organization at the convention and opened a discussion on the Code of Fair Competition.

Past President George C. Tway introduced Mayor J. J. McCue of Boise, who welcomed the delegates; and Commissioner of Public Welfare Lewis William gave an interesting talk on "The Advantages of Plumbing in Relation to Health in the Home and in the Community." A. J. Campbell followed with a short talk on "The Value of Modern Plumbing," which was broadcast by the local radio station.

Alexander W. Murray of Twin Falls, 86 years young and probably the only surviving charter member of the National Association of Master Plumbers, spoke on "The Necessity of Plumbing." Incidentally he also expressed disgust with the old joke about plumbers forgetting tools, adding that he had known plumbers who never forgot a wrench.

Recommendations were made to President Lessenger about appointments on the Divisional Code Authority Board after the signing of the code.

Idaho Falls was selected as convention city in 1935, and the date will be the first Saturday in May.

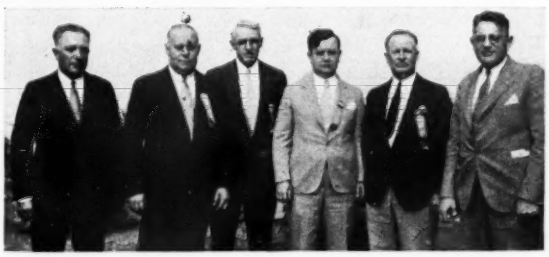
The convention ended with a banquet at which Joseph Imhoff acted as toastmaster.

# California Master Plumbers Discuss Vital Issues

THE newly signed national plumbing code, public utilities relations, cost finding and other live issues occupied the attention of the California State Master Plumbers Association at their 33rd annual convention, held at Sacramento, May 21st to 25th, with headquarters at Hotel Senator.

Eighty-five accredited members and alternates were in attendance, the total registration running close to 300. Meeting upon invitation with the California masters, were four delegates from Reno, Nevado; L. C. Savage, Geo. E. Wilkinson, C. W. Westover, A. C. Leonard.

The following named officers were elected to serve for the coming year: President, F. C. Schilling, Jr. of Los Angeles; first vice president, W. H. Picard of Oakland; second vice president, Wm. Nies, president of the Los Angeles Association; treasurer, J. B. Hawley of Sacramento; secretary, Louis E. Remy of Long Beach. The new directors are: Jas. F. Mauzy of Walnut Creek, E. B. Brooks of Indio, Chas. F. Hoffman, president of the San Diego Association. By unanimous vote the convention went on record as favoring



**New Officers of California State M. P. A.—Left to right: Secretary Louis E. Remy, Second Vice President William Nies, Treasurer J. B. Hawley, President F. C. Schilling, Jr., Past President R. W. Timmons, and First Vice President W. H. Picard**

the reappointment of Chas. M. Swinnerton of Los Angeles as a member of the board of directors of the N. A. M. P.

The reports of officers and of the six zone directors were particularly well received, reflecting a high order of cooperation between these groups. The zone directors and the officers acting in such capacity were responsible for an increased membership of some 600, thereby bringing the total close to 1,000.

The convention taking place within a few days of the signing of the National Plumbing Code, the address on this subject by National Director C. M. Swinnerton was of timely interest. Mr. Swinnerton detailed the difficulties of framing the code, paying tribute to the untiring labors of the National Code Committee and National President Robert J. Barrett.

R. E. Fisher of San Francisco, vice president in charge of Public Relations and Sales, of the Pacific Gas & Electric Company, keynoted his talk by stating "The Utilities Accord the Master Plumber a Highly Important Place in the Installation and Merchandising of Appliances."

An exhaustive report on the cost of retail merchandising and service as compiled by Frank Brodie of San Francisco, recently confined to the hospital with a serious illness, was read by J. F. Lindstrom of Burlingame. As a result of research extending over a lengthy period, it was shown that in order satisfactorily to conduct a retail plumbing business and secure reasonable profit, a mark-up of 50 per cent is necessary; and that such mark-up should yield a *net* profit of 5 per cent. A similar mark-up on labor charges is also recommended.

Among those who spoke briefly at the Wednesday morning session were L. C. Savage of Reno, Nevada; E. A. Coot, Sacramento plumbing inspector; A. Ferguson of Sacramento, Secretary-Treasurer, California State Association of Journeymen; B. A. Newman of Fresno, past president of the State M. P. A.

The following resolutions were favorably acted upon:

No. 1—Provided for the amendment of the By-Laws to increase the number of board members to nine. The State will be divided into zones for the sake of efficiency.

Resolution No. 2—Defined a merchant plumber as "any person, firm or corporation conducting business in territory where license is required, in conformity with the requirements of the area in which he operates, or in areas where no license is required, is capable of making a satisfactory installation under either the United States Bureau of Standard's Recommended Minimum Requirements for Plumbing as revised to May, 1931, or the Plumbing Code approved by the N. A. M. P. of the U. S., Inc., in convention, June, 1933; or a firm, corporation or other entity organized for the purpose of selling and installing plumbing products, any member, officer or regular employee of which is qualified as above provided, to engage in the installation and/or sales of plumbing materials."

No. 4—Commended the California gas utilities in their program of cooperation with the State master plumbers.

No. 5—Condemned as an unfair trade practice the policy of giving unlimited guarantee of more than one year by the manufacturers of water heaters; also condemning elimination of the master plumber in selling replacement and repair parts to the consumer.

# Oregon Holds Best Convention in Its History

THE Oregon State Association of Master Plumbers held its 33rd annual convention and the Portland Master Plumbers' Association celebrated its 50th anniversary at the Benson Hotel in Portland, Oregon, May 11 and 12. These two events made this year's gathering one of the best and most interesting in the history of the plumbing trade in Oregon.

President John Milne of The Dalles presided at the convention and appointed the following committees:

Credentials: H. H. Colliver, Ernest Stone, C. C. McCoy, and Chester A. Lynds, all of Portland.

Auditing: J. A. Bernardi, Salem; Wm. Nichol, Corvallis; J. S. Chambers, Marshfield, and A. L. Williamson, Eugene.

Resolutions: Chas. Fullman, R. D. Rennie, John R. Widner and A. L. Kuntz, all of Portland, and William Schroeder, Marshfield.

Publicity: Fred Van Hoomissen, G. O. Kendall and J. M. Rowe, all of Portland, and Arthur Spickerman of The Dalles.

Sergeant-at-Arms: J. Aschenbrenner, Portland.

The election of officers for the ensuing year resulted as follows: President, John Milne of The Dalles; vice-president, J. Aschenbrenner of Portland; treasurer, T. J. Rowe of Portland, and Walter J. Widmer was re-appointed to serve as secretary.

Due attention was given to the selection of a state code authority to be recommended to the National Association of Master Plumbers. After some discussion it developed that the majority favored a representation from different parts

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of the State. Names of persons recommended should be successful master plumbers, six members of the State Association and three non-members.

E. B. McNaughton, president of the First National Bank of Portland, gave the convention a banker's view on "Recovery, and How It Must Be Done." Jamieson Parker, president of the Portland Chapter of the American Institute of Architects, gave a well prepared talk on "The Relations of the Master Plumber and the Architect."

The next speaker was Ben H. Hazen, director of the Federal Home Loan Bank of Portland, who gave a talk on "The Future of Home Finance," in which he stressed the point that home construction will and must play an important part in any program of national recovery, and, of course, plumbing will receive consideration in such a plan.

Frank Messenger, assistant state compliance director of NRA, told of the effect and intention of the Government in the program for business and industry to police itself through codes.

E. A. Neupert, president of the Consolidated Supply Co. of Portland and vice-president of the Western Supply Association, urged co-operation between master plumbers and wholesalers to a greater extent than was ever before thought possible.

Among the guests at the convention were: James Smyth, Spokane, Wash., director N. A. M. P.; James Hall, president of Washington Master Plumbers' Association; E. G. Spangler, vice president of Washington Master Plumbers' Association, and R. D. Minkler, past president of Washington Master Plumbers' Association.

A large card party was the outstanding diversion on Friday evening, and the annual banquet was held Saturday evening in the Crystal Room of the Benson Hotel. Both events were most successful and enjoyable.

## Florida Association Re-Elects Its Officers

THE Florida State Association of Master Plumbers and Heating Dealers, Inc., held its annual convention on Monday and Tuesday, May 7 and 8, at the Thomas Hotel in Gainesville, Fla.

The National Association of Master Plumbers was represented by Director J. W. Pate of Birmingham, Ala., and the election of officers resulted as follows: President, D. A. Mayfield, Jacksonville; vice president, Foster R. Fanning, Winter Park; treasurer, Robert Engstrom, Jacksonville; secretary, T. H. Thompson, Jacksonville; all re-elected with the exception of Mr. Thompson the only new official this year.

President Mayfield appointed the following convention committees:

Resolutions: Messrs. McGhan, Green, Griggs, Keogel, Sheffield and Bush.

Auditing: Messrs. Inscho, Corbin, Rogers, Corbett and Scott.

Nominations: Messrs. Quinlan, Perryn, Dorsett, Burkhard, Goldenburg, Moss and Moon.

Credentials: Messrs. Engstrom, Mann, Fanning, Ramback, Blais and McCullough.

Memorial: Messrs. Shaw, Silver, Young, Chapman and Ewing.

Legislation: Messrs. Bush, Corbin, Ewing, Fanning and Dorsett.

Convention City Committee: Messrs. Gailer, Pepper and Watt.

Charles M. Chapman of Jacksonville served as reading clerk.

# Georgia Association Aims to Make Every Plumber a Member

GEORGIA State Association of Master Plumbers held its forty-second annual convention April 30 and May 1 in Atlanta, Ga., with headquarters at the Henry Grady Hotel.

President Ben J. Seckinger presided and outlined the work which the association has accomplished during the past year. He also made the following recommendations to the convention: 1. Active work on the part of the educational committee to acquaint all members with the workings of our codes. 2. Visits by the officers of the state association to members of the local and the zone associations. 3. Publication of the constitution and by-laws and their distribution to all members. 4. Continuation of the membership drive until every plumbing contractor in Georga is a member of the Local, State and National Association.

Jos. W. Pate of Birmingham, Ala., one of the directors of the National Association of Master Plumbers, was the official representative of National President Robert J. Barrett, and

New Officers of Georgia Master Plumbers' Association. From left to right: Treasurer A. J. Manning, Atlanta; President Ben J. Seckinger, Atlanta; Vive President Paul Elmore, Albany, Ga., and Secretary P. O. Wellborn, Atlanta

his address covered the many activities of the National Association and contained much valuable information about the NRA Code.

Dr. T. F. Abercrombie, director of Public Health of the State of Georgia, spoke about the health in the State and gave statistics covering the small percentage of deaths in the state as compared with the death rate a few years ago.

Chas. B. Wilson of Atlanta delivered an address on "The Plumbing and Heating Industry and its Relation to the Various Codes," and he also touched on the several housing projects of interest to the plumbing and heating trade.

L. U. Noland, president of the Noland Co. and president of the Virginia Chamber of Commerce, gave an interesting and instructive address on "Codes and Their Relation to Industry and Business."

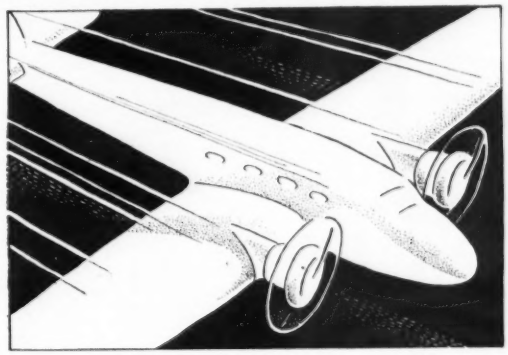
W. Reid Puckett, secretary of the Atlanta Association, spoke about "Chiselers," emphasizing the importance of always remembering our obligations to the industry as well as to our fellow men.

The election of officers resulted as follows: President, Ben J. Seckinger, Atlanta; vice-president, Paul Elmore, Albany; secretary, P. O. Wellborn, Atlanta, and treasurer, A. J. Manning, Atlanta.

The date and place of the next convention was left to the decision of the incoming officers.

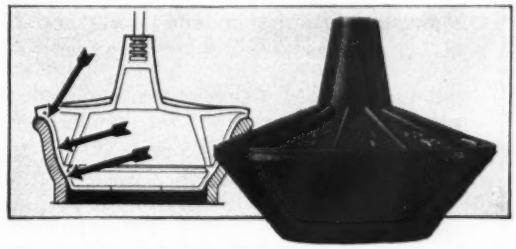
Two hundred persons attended the banquet held Monday evening. John W. Pickelsimer, president of the Atlanta Association, acted as toastmaster in a most happy vein, and the banquet was a fine success.


**FORM** of the modern aeroplane has contributed to the present cruising speed of almost 200 miles an hour. In addition such planes are more comfortable and use proportionately less fuel.



**FORM**
**BETTERS THEIR**
**PERFORMANCE**

**FORM** of the TRIPLE SEAL makes possible PERFORMANCE that was entirely unknown before. The TRIPLE SEAL actually stops leaks when other balls fail completely.



The superior PERFORMANCE of the TRIPLE SEAL is due to its distinctive FORM. The TRIPLE SEAL is so shaped that it actually fits well INTO the valve seat, not merely on top of it. The patented inner cone expands under water pressure, pressing the ball securely against the SIDES and the BOTTOM of the valve seat. These two seals, plus the TOP seal, supply three-way protection against water leaks and noisy, gurgling toilets.

Nor are the three seals the only Triple Seal advantage. The ball is manufactured with soft, pliable rubber, making the three seals water-tight even when the valve is badly corroded and pitted. It is light and buoyant, permitting complete emptying of the tank every time it is flushed. The neck is flexible, which allows the ball to seal even though the rod holding it isn't straight.

TRIPLE SEAL Tank Balls Are Sold
Only Through Recognized Jobbers

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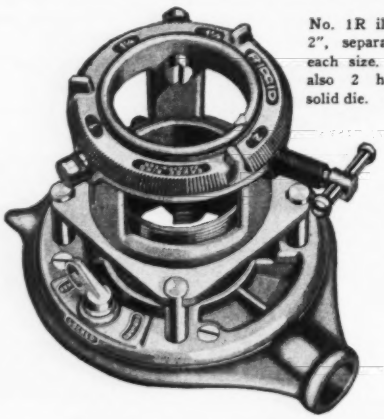
Los Angeles, Calif. Toronto, Canada

**TRIPLE SEAL**
**TANK BALL**



No. 1R illustrated, 1" to 2", separate chasers for each size. No. 1R made also 2 handle. No. 1, solid die.

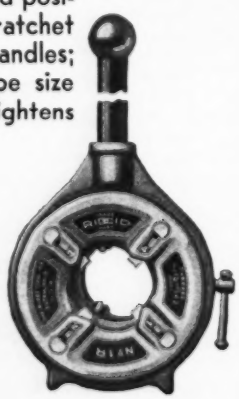
# FULL-FLOATING POSTS

## in this New Threader

ONE job—to taper the threads. That's all posts ought to do and it's all they do in this new RIDGID Poster Threader. No strain on them—the drive is direct, handle to head to chasers, all in a straight line that means power and precision and beautiful clean threads.

Because they're extra-heavy and not riveted, the posts protect the whole tool in rough handling, reducing repairs. If damaged, it's easy to replace a post.

But the tool is full of new features; chasers held by *enclosed* ball-and-coil spring, can't fall out; ratchet lever snaps into exact reverse, forward or locked position, latter making ratchet die solid with 2 handles; workholder sets to pipe size in advance, then tightens with *one* screw; chasers of special alloy steel are interchangeable, fit any other make of poster die. And the tool weighs only 12 lbs.



ASK YOUR JOBBER

**THE RIDGE TOOL CO.**
**Elyria, Ohio, U. S. A.**

RIDGID
PIPE TOOLS


# Indiana Master Plumbers Re-Elects Its Officers

THE Indiana State Association of Master Plumbers held its 38th annual convention at the Lincoln Hotel in Indianapolis, Ind., May 16 and 17, under the leadership of President Joseph G. Hayes.

### ELECTION OF OFFICERS

The election resulted in the re-election of all the officers as follows: President, Joseph G. Hayes, Indianapolis; vice president, John H. Niewoehner, Richmond; secretary-treasurer, Frank E. Irish, Indianapolis. Board of directors: Earl L. Clevenger, Muncie; Victor Knauth, Vincennes; S. C. Durbin, New Albany; Allen J. Weinhardt, Terre Haute; Harry A. Hattersley, Fort Wayne, and H. J. McAuliffe, Indiana Harbor. Sergeant-at-arms, Otto H. Hoff, Brazil.

Harry A. Hattersley and Frank E. Irish were elected as delegates to the National convention and H. J. McAuliffe and John H. Niewoehner were selected as alternates.

The selection of a city for the next convention was left in the hands of the new board of directors.

### COMMITTEES APPOINTED

President Hayes announced the appointment of convention committees, as follows:

Resolutions: Harry A. Hattersley, Fort Wayne; A. C. Sandberg, Lafayette, and Frank Layton, Indianapolis.

Nomination: Allen J. Weinhardt, Terre Haute; H. J. McAuliffe, Indiana Harbor, and Edward Kanney, La Porte.

Memorial: Earl L. Clevenger, Muncie; Edward Kanney, La Porte, and S. C. Durbin, New Albany.

Auditing: H. J. McAuliffe, Indiana Harbor; Frank Layton, Indianapolis, and A. C. Sandberg, Lafayette.

Credentials: Victor Knauth, Vincennes; Kenneth Werkhoff, Lafayette, and Tyra Collins, Indianapolis.

Reading clerk: John H. Niewoehner, Richmond.

Sergeant-at-arms: Otto H. Hoff, Brazil.

### PRESIDENT HAYES PRESENTS HIS REPORT

In his report for the past year President Hayes also covered his work as code committeeman for the National Association of Master Plumbers. He told of the meetings he had attended throughout the State and praised the co-operation he had received from Secretary Irish and members of the State Board of Directors.

Past National President E. B. Kleine received hearty applause following his reading of a telegram from the National office in Washington, announcing that President Roosevelt had signed the Plumbers' Code.

A resolution was passed at once to the effect that Indiana Association send a telegram to National President Robert J. Barrett, congratulating him on the signing of the code.

### NOTABLE ADDRESSES

"Lead and How Its Use Will Help the Plumbing Industry" was the title of an instructive address by Robert Dick of the Lead Industries Association.

Charles E. Gawne, president of the Chicago Plumbing Contractors' Association, in his address on "The Plumbers' Value to the Health of the Nation" urged the plumbers to take a more active interest in getting laws passed that will protect the health of the public.

President Henry P. Reger spoke on "Organization and the Duties of Organization." He covered his activities in Illinois to prove that if members will get together and work, they can build up their association to such a degree as to get things worthwhile done.

W. E. Price, president of the Central Supply Association, advocated closer cooperation between Master plumbers and

Wholesalers. He said that association means strength and cooperation, and that the master plumbers of Indiana would not now he troubled by chain stores, if they had been properly organized. He urged them to see that the sanitary laws in the state be enforced in a better manner than they are at the present time.

## Virginia Master Plumbers Elect E. F. Lawler President

VIRGINIA Associated Plumbing and Heating Contractors held its eleventh annual convention in Charlottesville, Va., on Monday, April 23, and heard an instructive and interesting address by Robert J. Barrett, president of the National Association of Master Plumbers, in which he told of the tremendous work of this organization particularly in connection with the NRA Code for the plumbing trade. He also commended the Virginia Association for its activities and thanked the members for their loyal support of his administration. Finally he impressed his hearers with the importance of the National convention in Washington May 28 to 31.

President William E. Wolff of Clarendon presided at the convention.

The election of officers gave the following result: President, E. F. Lawler, Norfolk; first vice president, Harry G. Longworth, Richmond; second vice president, H. C. Messner, Clarendon; third vice president, A. L. Wright, Portsmouth. William E. Coley of Norfolk was appointed secretary-treasurer. The following were elected members of the board of directors: John J. Shannon, Norfolk; J. L. Pace, Roanoke; H. F. Chichester, Alexandria; E. G. Harris, Richmond; W. L. Lacy, Charlottesville; J. C. Pettigrew, Richmond; Percy W. Miller, Winchester, and William E. Wolff, Clarendon.

President-Elect E. F. Lawler, after being installed in the chair of leadership by National President Robert J. Barrett, said that he is determined that Virginia shall double her present membership which is 140.

## Alabama Association for More Modern Plumbing

THE slogan "More Modern Plumbing and Heating Facilities in More Alabama Homes" brought the master plumbers of the state together at their fifty-second annual convention in Montgomery, May 14 and 15. The association called on state and county health officials and the newly formed Construction League of Alabama for assistance along this line.

Joseph W. Pate, of Birmingham, who was re-elected for his fourth term as president sounded the keynote of improved sanitary conditions in Alabama. The other officers also re-elected were: Charles D. Bailey, Montgomery, vice president; and J. H. Hamill, Birmingham, treasurer. W. A. Finley of Birmingham is secretary by appointment of the president. Florence was chosen as the 1935 convention city.

The call for more and better bathrooms came after Mr. Pate stated that Alabama ranks lowest among the states in the rural consumption of water, only two out of every 100 homes in the state having running water and only one out of every 100 homes having bathtubs. Mr. Pate added that only recently did the Birmingham health department require that plumbing be installed in the homes of colored residents.

The following representatives to the Construction League which also includes contractors, electricians and architects


It's a KOVEN Product

An ARMY of Satisfied Plumbers

The plumbing jobber knows how much easier it is to sell the type of tank that has given satisfaction.

The KOVEN tanks have virtually an army of plumbers that will use no other make—because they have found them to be the best that they can get for their money, combined with the reliable backing that goes with every KOVEN product.

No wonder that the leading plumbing supply houses also prefer KOVEN.

RANGE BOILERS Galvanized or Copper
SCULLERY SINKS
BARBER BOILERS
KOVEN-PARACOIL TANKS
STORAGE TANKS Steel or Copper
FUEL OIL TANKS
EXPANSION TANKS
PNEUMATIC TANKS
SEPTIC TANKS

Insist on the best by asking for KOVEN products from your jobber.

*Send for new Plumbers Hand Book.*

L.O. KOVEN & BRO. INC.
JERSEY CITY, N.J.

were elected: Joseph W. Pate, who is also vice president of the League; W. T. Perry of Montgomery, and William Wilby, of Selma.

Machinery for the enforcement of the plumbing code in Alabama was set up with the following as association members of the state code committee: D. R. London, Huntsville; Joseph W. Pate, Birmingham; M. L. Kistler, Alexander City; W. T. Perry, Montgomery, and J. W. Kelly, Mobile; and the following as non-association members: O. L. Allen, Birmingham; H. M. Ausman, Bessemer, and T. T. Barrett, Boaz. Local committees were also appointed by President Pate.

On recommendation of President Pate the association voted to incorporate and also to adopt an emblem. Dues were raised to $14 per year with the provision that a $25 initiation fee be added after July 1. Mr. Pate reported that the association enjoyed a tremendous increase in membership during the year.

Committees which served during the convention were: Convention, W. T. Perry, James Cahalan and O. C. Johns; finance, George H. Russell, J. L. Pope, and John Block; resolutions, J. W. Kelly, J. B. Dobson and Chas. A. Mandy; credentials, Harmon C. Williams, A. C. Richardson and Paul Berry; memorial, Charles Wehby, W. F. Rogers and George H. Karter.

Resolutions passed included one protesting jobber sales direct to city, county, state and federal governmental units.

Charles A. Mandy, president of the Birmingham association, reported on the success of the ordinance which effectively checked theft and traffic in stolen plumbing fixtures in that city. The law provides that a record be kept of the purchase and sale of each piece of second hand plumbing. Copies of the ordinance have been prepared by Mr. Mandy for distribution to those interested.

# Tennessee Master Plumbers Hold Successful Convention

THE Associated Master Plumbers of Tennessee held their thirty-sixth annual convention on Monday, May 21, in the Gold Room of Hotel Patten in Chattanooga under the leadership of President Gustav Limberg of Memphis.

Joseph W. Pate of Birmingham, Ala., member of the board of directors of the National Association of Master Plumbers, represented this organization and delivered a splendid address on general conditions. The convention gave him a rising vote of thanks for his efforts.

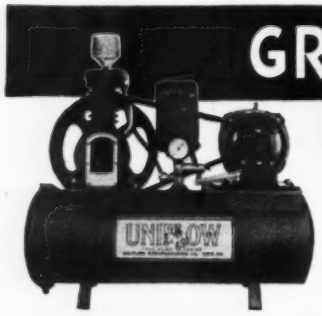
A. R. McGonegal, chief plumbing inspector of Washington, D. C., and past president of the American Society of Sanitary Engineering, in his address told about plumbing conditions in different parts of the country and referred extensively to the recent trouble caused by amebic dysentery in Chicago and other cities.

Telegrams were sent to President Roosevelt and General Hugh S. Johnson expressing appreciation and gratitude for their able leadership.

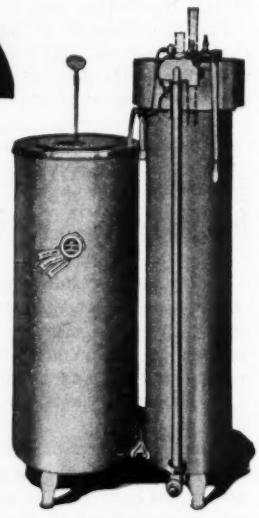
The election of officers resulted as follows: President, Gustav Limberg, Memphis; vice president, John Cuneo, Chattanooga; treasurer, J. L. Evans, Memphis. The secretary will be appointed by President Limberg.

It was decided to hold the next annual convention in Nashville.

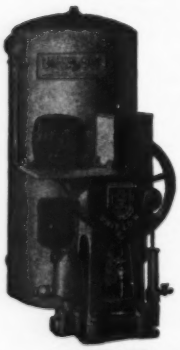
Resolutions were passed giving J. L. Evans of Memphis and W. V. Kennedy of Nashville life memberships in the Tennessee Association for their services to the association and the plumbing business in Tennessee.


GREATER PROFITS
*With a complete line*



UNIFLOW dealers have more than one item to sell. With the complete UNIFLOW line—priced on a *new, low net* basis—UNIFLOW dealers can offer their customers the greatest dollar values. They can offer time tested quality *yet meet bargain competition.* 1934 has profits in store for you if you have the complete UNIFLOW line. Ask for the UNIFLOW Catalog direct from us or from your jobber.



BEER PUMPS

Quiet, efficient and producing clean air UNIFLOW beer pumps are made in every size necessary to care for the largest or smallest establishments. *New, low net price basis.*

WATER SOFTENERS

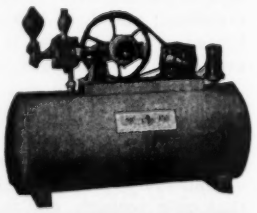
A complete range of sizes and capacities in self-salting, self-operating or hand-operated water softeners. Easily reconditioned. For domestic or commercial uses. *New, low net price basis.*

DEEP WELL SYSTEMS

Complete automatic water systems, ranging in capacity from 250 to 5,000 gallons per hour. The Blue Ribbon line—unusually well constructed but priced to meet *all* competition. The Premier line also priced on new, low net price basis.

SHALLOW WELL SYSTEMS

Designed for use where depth of water does not exceed 22 feet. In sizes from 250 to 5,000 gallons per hour, shallow well pumps are supplied in both the Blue Ribbon series and the Premier line. UNIFLOW patented features incorporated in all sizes.



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JOBBERS
Write or wire for our Special Proposition.

UNIFLOW MANUFACTURING CO., DEPT. D, ERIE, PA.
*makers of fine precision equipment since 1921*

WATER SYSTEMS — WATER SOFTENERS — WATER FILTERS — BEER PUMPS
BEVERAGE COOLERS — ELECTRIC REFRIGERATORS — CELLAR DRAINERS

The Chattanooga Association entertained the delegates and visitors at a barbecue immediately after adjournment.

The Women's Auxiliary of Chattanooga entertained the visiting ladies with a pleasant automobile trip over the Lookout mountain.

## La.-Miss. Association Elects J. R. Lawton President

THE Louisiana-Mississippi Association of Plumbing and Heating Dealers held its annual convention at the Robert E. Lee Hotel in Jackson, Miss., on Monday, April 23, under the guidance of President J. P. Davis of Jackson, Miss.

Discussions about code matters occupied a large portion of the convention. The efforts of President Robert J. Barrett and the Special National Committee on the National Industrial Recovery Act, to secure a co-related code, were lauded in the highest manner. This brought on the thought of the necessity of better organizing. An excerpt from the March issue of "DOMESTIC ENGINEERING, quoting parts of a letter to wholesalers from the Joint National Committee of Supply Wholesalers, and this was used as a vehicle to carry over a resolution offering membership to new members at the special low rate of $6 for one year, and requesting the trade papers to give publicity to this drive for new members.

Louis J. Petrie, member of the board of directors of N. A. M. P., official representative of National President Barrett, brought greetings from the national officers and spoke of the efforts of the national officers to secure a co-related code of the three branches of the industry.

The following officers were elected: President, J. R. Lawton of New Orleans; vice president, Preston Brasher of Alexandria, La.; treasurer, E. L. Kimble of New Orleans.

President Lawton appointed Louis J. Petrie of New Orleans as secretary and said he would appoint the board of directors in a few days, and he did this later as follows:

Board of directors: E. A. Harwell, Jackson, Miss.; L. D. Hill, Clarksdale, Miss.; R. R. Hamilton of Gulfport, Miss.; T. E. Hodges, Shreveport, La.; W. J. Riley, Monroe, La., and R. T. Craft, Lake Charles, La.

## North Carolina Association Changes Its Name

THE 24th annual convention of the North Carolina Association of Master Plumbers (the name having been changed by resolution during the meeting to this form) met in the King Cotton Hotel, Greensboro, N. C., on May 16. The new officers elected without contest are: E. W. Wilson, Asheville, president; R. H. Bashford, Raleigh, first vice president; H. L. Hopkins, Charlotte, second vice president; E. B. Grady, Concord, secretary-treasurer (re-elected).

No less than ten delegates to the national convention at Washington were selected, with alternates, reflecting the enthusiasm with which the members received the news of the signing of the code while at luncheon.

Resolutions passed by the convention changed the name of the association from North Carolina Association of Plumbing & Heating Contractors to the name noted in the first paragraph above. A second resolution set forth that the association joined with President Barrett "in rejoicing in his and our success in obtaining an instrument which shall be a milestone in the progress of our profession." The next resolution endorsed the code "whatever it may be in its present form." The membership also went on record as endorsing President Barrett for a second term.

Speakers at the meeting were John J. Shanahan, Norfolk, Va., a director of the national association; W. R. Dosher, past national secretary and director; W. H. Sullivan, Greensboro, who spoke on "Confidence and Co-operation," and Henry Longley, Wilmington, past president of the national association. The convention also heard from A. S. Pettit, chairman of the local committee for the convention, and from President J. A. Haley of Charlotte.

Convention committees appointed by President A. Z. Price were as follows: Resolutions: H. S. Ritchie of Albemarle, Henry Beck of Winston-Salem and W. R. Dosher, Jr., of Wilmington. Auditing: J. B. Montford of Raleigh, F. A. Paschall of Durham and W. E. Wilson, Asheville. Nominating: A. S. Pettit of Greensboro, George Weant of Salisbury and J. V. Andrews of Charlotte.

There were one hundred and twenty-five master plumbers in attendance at the meeting.

The change in name represents action taken because the code applies to the plumbing industry as distinct from the heating industry. It was, therefore, decided to establish separate organizations for convenience in administrating the codes.

## New Jersey Association Hears President Barrett on the Code

THE 33d annual convention of the New Jersey State Association of Master Plumbers was held May 18 and 19 at the Madison Hotel, Atlantic City, N. J. Two hundred members and delegates attended and received the address of National President Robert J. Barrett, and the news of the signing of the code, with the utmost enthusiasm.

Officers elected for the new year were: President, Edmund P. Ingram; vice president, Geo. McVoy, Plainfield; second vice president, Edward J. Geyer, Bergenfield; third vice president, Halsey B. Armstrong, Morristown; fourth vice president, Geo. H. Brenner, Orange. Hon. Geo. H. Werner of Orange was re-elected treasurer and Anthony Marzullo of Jersey City was appointed as secretary by President Ingram. Trustees elected were Irving Chew of Camden, Chas. H. Fox of Trenton and Fred Baker, Newark. Retiring President Geo. L. Bird and President Ingram were elected delegates to the National convention. At the invitation of J. T. Brennan, Jersey City was selected for the next annual convention.

Officers reports, and the reports of committee chairmen, showed a year of intense activity, and a substantial balance in the treasury.

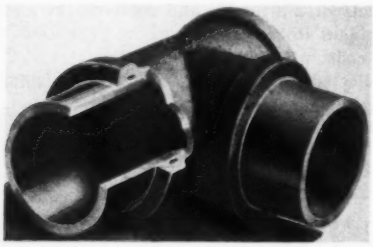
Convention committees were named by President Geo. L. Bird as follows: Resolutions: John J. Corcoran of Jersey City, J. D. Heery of Newark, Wm. H. Chesnut of Montclair and Irving Chew, Camden County. Auditing Committee: M. T. Baudermann of Newark, Wm. Jacobs of Union City and F. B. Behm of Elizabeth. Credentials Committee: John J. Kane of Morristown, John Conard of Trenton, David Buist of Newark.

Many resolutions were passed upon, among them being one to establish a permanent office for state headquarters; to attempt to secure legislation prohibiting utilities from selling merchandise and from using subsidiary construction companies; to set up a state council to be represented in the making of local agreements with journeymen; to try to have plumbing inspections placed under the State Board of Health; that henceforth local associations handle annual conventions; that the association be represented in setting up wage rates for skilled work under Federal, state or local relief programs; that certain changes be made in the constitution and by-laws governing annual conventions and setting up four meetings a year. A strong resolution of appreciation for the work of President Barrett was also passed.

# NEW STORE·SHOP and JOB ITEMS

## New Bronze Pipe Fitting

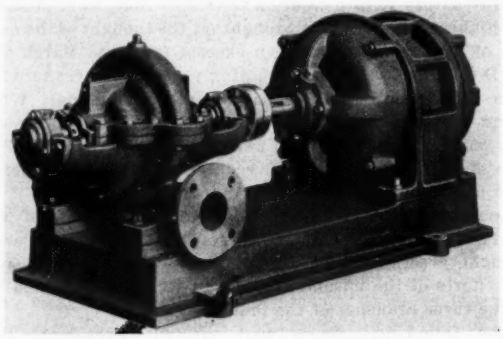
It will be seen from the accompanying cut-away view of a new bronze pipe fitting just recently placed on the market, that this incorporates in each opening of the fitting a ring of brazing alloy. The fitting is installed by merely slipping the pipe into the fitting and applying a flame in the proper manner until a white ring appears between the pipe and the fitting outlet. As shown in the illustration, the brazing alloy flows out between the fitting and the pipe in both directions from the ring. The proper quantity of alloy is designed to be included in each outlet. In the event it is necessary to remove the fitting, this can be done by merely repeating the operation employed in making the original joint in-so-much as sufficient brazing alloy is provided in the ring for two complete joints. The illustration shows



approximately the amount which is withdrawn from the groove to make the first joint. This threadless bronze fitting is made for tubing of the standard iron pipe size and for extra heavy brass and copper pipe. Also these fittings are available in extra heavy pattern. Where desired, thin wall copper tubing, iron pipe size outside diameter, can be used. This development has been brought about through the collaboration of the Air Reduction Sales Company, Lincoln Bldg., New York City; Walworth Company, 60 E. 42nd St., New York City, and Handy & Harmon, Columbus, Ohio.

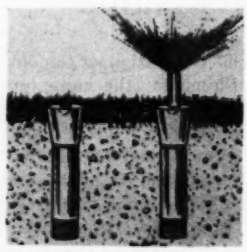
## A New Double Suction Pump

The accompanying illustration represents a new line of double suction split case pumps which have been designed especially for operation at high speed. These pumps have been developed to provide a suitable unit for direct connection to electric motors or steam turbines operating at 3500 rpm. Also, they may be belt driven or operated through gears by low speed drivers such as gasoline engines. Ball bearings of the deep groove type designed for heavy duty precision are used on each side of the pump to take care of both radial and thrust loads. The bearing supports, bed plate, pump casing and the shaft are specially proportioned for the purpose of providing complete rigidity. This line of pumps is built in sizes from 1½ in. to 5 in. and has been made suitable for general pumping duty, factory services, chemical processes, municipal water supply and for handling other liquids as well as water. Morris Machine Works of Baldwinsville, New York, is the manufacturer.



## New Lawn Sprinkler Head

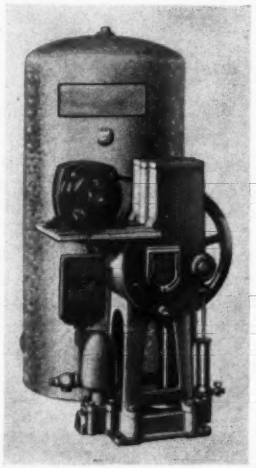
There has just been placed on the market a new lawn sprinkler head. This is shown in the accompanying illustration. It has been made to operate on regular house service lines. The spray head rises above the grass. It is available in full, half and quarter heads. With a 45-lb. pressure, 14 heads are rated as being able to operate simultaneously on a regular house service connection. Each head is designed to cover a 14-ft. circle. The Niagara Irrigation Co. of Olmsted Falls, Ohio, is the manufacturer.



## Deep Well Water System

Unusually quiet operation is the outstanding feature listed for the deep well pump shown in the accompanying illustration. Double sets of spiral cut gears running in oil are designed to balance the load on the bearings and to produce quiet operation. Adjustable eccentric bearings on this pump are provided to enable the user to take up wear which may occur and to thus eliminate back lash. A differential cylinder has been employed to equalize the motor load in-so-much as

this equipment pumps water on the down stroke as well as on the up stroke with a consequent elimination of a racing of the motor on the down stroke. The splash system of oiling is used. All moving parts are designed to run in a bath of oil at all times. Old oil can be drained out and removed like the oil in the crank case of an automobile.

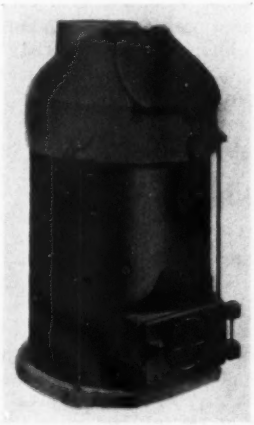


This is equipped with an automatic switch designed against sticking. V-belts also are a part of the equipment. Capacities range from 250 to 5000 gal. per hour. This manufacturer's complete line of equipment consists of both shallow and deep water systems. The maker is the Uniflow Manufacturing Co., located at Erie, Pa.

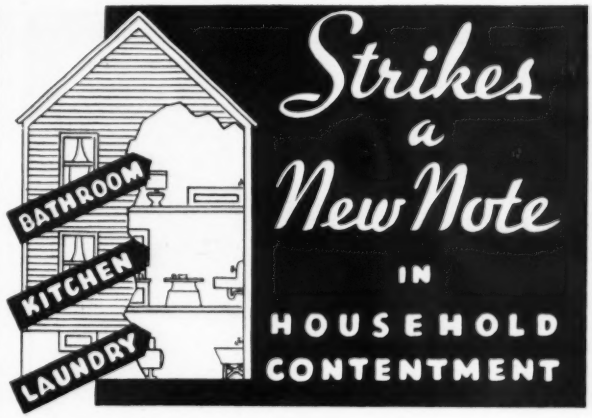
EDITOR'S NOTE: An item on page 124 of the April issue described this company's new line of shallow well water systems incorrectly by referring to the shallow well pump as including some of the features of their deep well pump mentioned in the above description. Specifically, the April item, from the line reading "It is described as having a double set of spiral cut gears, etc.," refers to the deep well unit.

## Coal Fired Tank Heater

In this round dome type tank heater which just recently has been placed on the market for water heating, the fire pot is brick lined. The height of the unit over all is 24 in.



while the height of the water body is 8½ in. The diameter of the water body outside is 13 in.; inside 10 in. The height

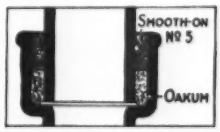

THE ROPER Rotary Gear Water System strikes a new note in household contentment and you, as a plumbing contractor, can capitalize on the desire it creates—*right now.*
Folks want—and *need*—the manifold advantages of economical, dependable water supply and vast numbers are welcoming the opportunity of buying a water system at a price they can afford to pay.
ROPER profits can be *yours*—write or wire for Bulletin W2D today.

**GEO. D. ROPER CORP., ROCKFORD, ILL.**

**ROPER** AUTOMATIC ELECTRIC WATER SYSTEM

A high quality pump at a very low price for cisterns and shallow wells, pumping clear water. We can supply reciprocating types, also deep well outfits.

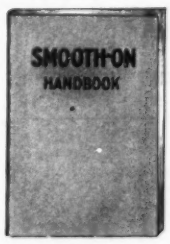
**For caulked bell-and-spigot joints at difficult locations, use Smooth-On No. 5**




WHERE caulking with lead would be difficult, as in making joints in corners, confined places and horizontal lines, Smooth-On No. 5 makes a tight joint with least effort, and no fire risk or danger of burns. Applied cold like a putty and dependable on soil, gas, steam and hot or cold water pipes. Buy in 1 or 5-lb. can, or 25 or 100-lb. steel keg.

**Write for the Smooth-On Handbook**

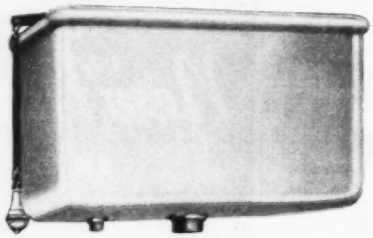
136 Pages of instructions, diagrams and useful information for plumbers, heating contractors, shop managers and power plant engineers. Tells what you want to know about making tight joints at pipe connections, seams, cracks, etc., making loose parts tight, anchoring in wood, masonry and metal, etc. The methods outlined save time, labor and material and represent the best practice. Keep a copy on your desk.



*Sent free on request.*

SMOOTH-ON MFG. CO., Dept. 12
570 Communipaw Ave., Jersey City, N. J.

*Do it with* **SMOOTH-ON**



*The No. 200 Composition High Closet Tank*

# *Meets an* INSISTENT *Demand*

HERE is another profitable item in the *American* Line which meets an insistent demand for a reliable high closet tank. Like all other *American* products, the No. 200 Composition High Closet Tank is quality made throughout. This tank is available completely equipped with trip device, syphon seat, goose neck for syphon seat, with either top or bottom supply ball cock and pull chain. Order the No. 200 from your jobber. Shipments made promptly.

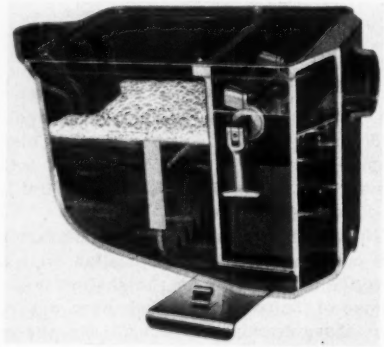
**American**
**SEAT AND TANK CO.**
GRAND HAVEN MICHIGAN
Sales Office:
ABINGDON, ILLINOIS

☆ **American** ☆
*THE QUALITY LINE*

of the brick lined fire pot is 7 in. while the diameter of the grate is 10 in. and the depth of the ashpit is 7 in. This heater is rated as having a capacity of 80 gallons per hour. It is tapped for 1 in. pipe. It has a cast iron bottom and is furnished with a rocker grate. Oakland Foundry Company, located at Belleville, Illinois, is the manufacturer.

## A New Grease Interceptor

What are described as being self-skimming provisions are incorporated in the grease interceptor shown in the accompanying illustration. The device consists of two chambers, one for collecting the grease and the other for removing it. In the first chamber, the grease is separated from the water and held on the surface. An all brass, ground-seat valve, made to be self-cleaning, is fitted in the wall between the first and second chambers. When it is desired to clean the interceptor, the door on the side is opened, the valve handle is lifted and turned a quarter turn. This permits the grease

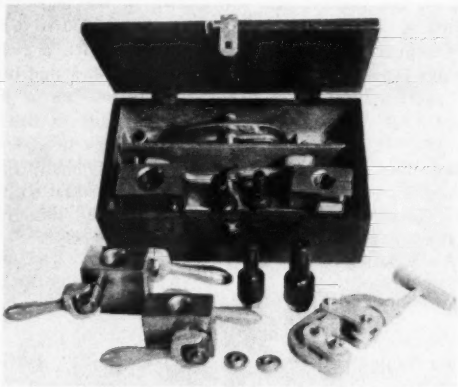


which has accumulated to be discharged through the valve to the metal receptacle in the second chamber. After the grease stops flowing into the receptacle, it is removed and emptied. The receptacle then is replaced, the valve is turnd back, and the metal door is closed. The design is such that the metal door cannot be closed until the valve handle is returned to the closed position. This is built as a safeguard against soiling the kitchen floor. A variety of sizes is available. Interceptor Corporation, of Michigan City, Indiana, is the manufacturer.

## Cutter, Swedging Tool and Vise

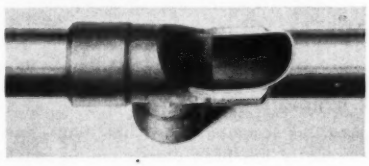
The accompanying illustration shows a group of tools which has been placed on the market for cutting and flanging copper pipe. The cutter is designed to make a square cut so that the flange can be centered perfectly . The vise for the flanging tool is designed to prevent the pipe from swelling just below the flange; this permits the coupling to slip in place without difficulty. The set includes a tubing cutter, having a capacity of 1½ in.; two extra thin wheels for the cutter; one ¾-in. combination tube holder, forming tool and clamp; one ¾-in. swedging tool; one 1-in. combination tube holder, forming tool and clamp, and one 1-in. swedging tool.

This set comes packed in a heavy mahogany-finish carrying box. H. W. Clark Company, located at Mattoon, Illinois, is the manufacturer.



## New Solder Fittings

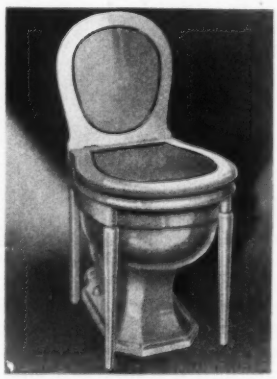
The accompanying illustration shows a cut-away view of a new cast bronze solder fitting which just recently has been placed on the market for use in making threadless connections for copper tubes. Features which are listed for this



are that it is made of cast bronze, it is trade marked, it is carefully tested, and it is accurately machined. The American Brass Company, of 25 Broadway, New York City, is the manufacturer.

## A New Toilet Seat

Here is a new piece of furniture which has been designed both as a toilet seat and as a bathroom chair. It has been made so as to take up no more space than the water closet



bowl itself. This item is offered in 12 color combinations. C. A. Boyle & Co., 21st and Rockwell Sts., Chicago, Illinois, is the manufacturer.


# F-M Dealers are *Cashing in!*

This is an F-M Water System year. Prices are lower—but the public have been quick to show that they want something more than low price in a Water System. They have been quick to understand that F-M volume permits *quality* and *dependability* along with a reasonable price.

Therefore, they have responded to F-M advertising in amazing numbers. They have written by the thousands for complete information about these systems—*and address of nearest F-M Dealer.*

**$48.50**

The leader of the F-M line. $48.50 list, f. o. b. factory for a complete electrically operated, 200-gallon unit including motor protective relay—no extras. Also a complete line of shallow and deep well systems to meet any requirements.

And F-M Dealers are cashing in. They are taking these prospects sent to them by Fairbanks-Morse and turning them into orders.

The F-M dealer has more to aid him right now than ever before. He has a decided "edge" on selling Water Systems in his territory. The F-M Dealer arrangement has more to offer you in the way of profits.

You owe it to your business success to use the coupon below for full information.

## New Catalog Ready

A new catalog together with a new price list covering the complete line of Fairbanks-Morse Water Systems is now ready. Pin the coupon below to your letter-head—drop it in the mail and your copy will be sent promptly.

FAIRBANKS, MORSE & CO.

Manufacturers—Chicago, U. S. A.

Branches and Service Stations Covering Every State in the Union

**FAIRBANKS-MORSE**

C O U P O N

Fairbanks, Morse & Co., Dept. I-6,
900 S. Wabash Ave., Chicago, Ill.

Please send me Water System Catalog and information on your proposition for dealers.

Name .....

Address .....

.....

We mean Profit and Quality. They work hand in hand; put in quality products and the profits will take care of themselves. That is how it works out when you install a Pennsylvania Range Boiler. The job brings a worth-while return and makes a friend of the customer—which means more business from him and from folks he recommends.

Pennsylvania Range Boilers are built to last. Made in 3 types: All Welded, Welded and Riveted Galvanized and Everdur Copper.

*More information is yours for the asking.*

PENNSYLVANIA RANGE BOILER CO.
Established 1895
24th and Washington Ave., Philadelphia, Pa.

**PENNSYLVANIA RANGE BOILERS**

*Under the Floor*

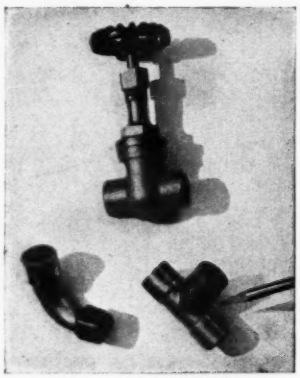
There may be a maze of drains and you may safely cover them over with concrete, if they are DURIRON.

THE DURIRON COMPANY, Inc.
410 N. Findlay St. Dayton, Ohio

DURIRON
ACID PROOF
DRAIN PIPE

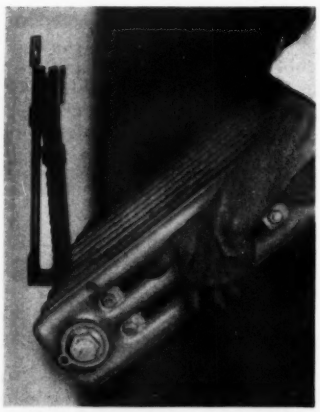
## Wrought Copper Fittings

What is described as an integral wrought copper tee and a threaded wrought copper elbow, just recently have been placed on the market and are shown in the accompanying illustration. These two fittings are being added to a regular line of copper pipe and fittings, together with a red brass gate valve especially designed to give a full flow and intended to be particularly useful for steam or hot water heating systems. All three of these fittings are made in sizes up to 1 in. The tee is supplemented by a cast tee in size 1¼ in. to 2 in. The new wrought copper elbow is made for both male and female and for most standard reduction connections. American Radiator Company, of 40 W. 40th St., New York City, has placed this line on the market.



## Wall Hung Radiator Bracket

The illustration accompanying this item shows a bracket which just recently has been placed on the market for hanging wall type radiators. The picture shows the radiator in the process of being hung in place. Obviously, in the final position, the radiator is swung upward and is secured in a vertical position by means of a tie bolt. This bracket has



been made to be quickly adjustable and to handle all types, sizes, and makes of radiators, including both wall and tubular types. The design is worked out so that the bracket automatically adjusts itself for the width of the radiator in question. It is made to come all in one piece. Quality Products Company, of 810 18th St., N. W., Washington, D. C., is the manufacturer.

# New Trade Literature

### Catalog of Water Heating Garbage Burners

Kewanee Boiler Corporation of Kewanee, Ill., is distributing a new catalog of its line of water heating garbage burners, water heaters and tanks, including riveted and welded tanks, air receivers, pneumatic tanks, pressure and storage tanks.

### Display Card Announces New Closet Unit

Camden Pottery Company of Camden, N. J., is distributing a display card announcing a new close-connected bowl and tank combination, designed to conserve space. There are no exposed metal parts between tank and bowl. The tank is bolted to the closet, does not fasten to the wall and therefore can be installed across a corner of the room if necessary. It is made in two roughings, either 10 or 12 inches, when tank is set 1 in. from wall.

### Folder on Showers

Crane Co. of Chicago, Ill., has issued an exceptionally neat folder, "April Showers All the Year 'Round," illustrating and describing its line of showers and shower heads for homes, clubs, hotels, Y. M. C. A.'s and other institutions. These showers are described as being precise and simple in mechanical operation, and glistening and attractive in appearance. A curtain rod and shower curtain are also illustrated and described in this folder.

### Booklet on Bakelite Molding Materials

Bakelite Corporation of Bound Brook, N. J., has recently issued a 48-page booklet, 6x9 in. in size, entitled "Bakelite Molded," and dealing with the subject of Bakelite molding materials and their uses. These materials were invented in 1907 by Dr. L. H. Baekeland, after exhaustive research. Dr. Baekeland gave the world an entirely new substance, phenol resinoid, a substance which has found extensive use in nearly every field of industry. The various Bakelite materials are manufactured under 114 United States patents.

### Folder on Stainless Steel

The American Rolling Mill Company of Middletown, Ohio, has issued an attractive folder under the title: "What's a Good Stainless Steel Supposed to Do?" This folder describes this company's stainless steel alloys in detail, and tells what they will do. It also lists the six surface finishes in which it can be obtained: 1, A white pickled finish; 2, a smooth, dull cold-rolled finish; 3, a smooth, bright cold-rolled finish; 4, a bright satin finish, with very fine polish lines; 5, a soft-lustered, velvety finish, and 6, a glossy bright polish, often called soda fountain finish.

### Pocket Catalog of Vises and Pipe Tools

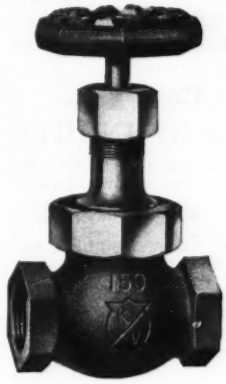
Hollands Manufacturing Company of Erie, Pa., has issued a handy pocket catalog of its products, including solid jaw vises, swivel jaw vises, soft metal jaws for machinists' vises, filers and tool-makers' vises, woodworkers' vises, combination vises, bench vises, anvil vises, home vises, hinged pipe vises, roller jaw pipe vises, malleable reversible ratchet stocks, pipe stocks and solid dies, adjustable stocks and dies, pipe cutters, melting pots, malleable iron ladles, babbitt ladles, pouring ladles and glue pots. The catalog consists of 16 pages, 3½x6¼ in. in size.

### The Eastern Foundry Co. Issues New Catalog

The Eastern Foundry Company of Boyertown, Pa., has issued its catalog B-1934, illustrating and describing its line of cast iron soil pipe and fittings and its cast iron specialties. The catalog consists of 24 pages, 8½x11 in. Pages 1 to 11 feature the company's soil pipe and fittings, the next seven pages are devoted to its cast iron plumbing specialties, and the balance is taken up by compound interest tables. Among its plumbing specialties are: Closet bends, closet flanges, sanitary tee cleanouts, trap screw ferrules, vent boxes, water boxes, boiler stands and rings, refrigerator


KENNEDY

Valves - Pipe Fittings - Fire Hydrants



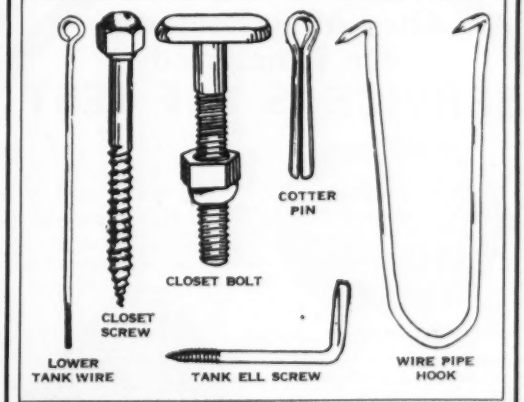
for
150-lb. steam pressure
250-lb. water pressure

Note these features of Kennedy Fig. 89 Heavy Standard Bronze Globe Valve

- Cadmium-plated malleable iron union bonnet ring and packing nut for permanent protection against rusting, self-lubrication of threads, and protection from chipping or marring.
- Low friction contact surface between stem head and disc holder for easy operation.
- Disc holder has four prongs for guidance and to prevent binding.
- Raised seat in body is unusually high for longer disc life.
- Slip-on disc holder locks at wide-open position.
- Stem has large number of heavy contact threads to reduce wear.
- Conical joint between stem and bonnet permits packing under pressure.
- Stuffing box is exceptionally deep with molded packing and long gland follower.
- Non-heating handwheel.

The Kennedy Valve Mfg. Co.
Elmira, N. Y.

Warehouses and Representatives in principal cities.




GO AND GET IT!

WITH the return of warmer weather comes the usual increased volume of repair and remodeling work and no small percentage of this work will come from your immediate locality. It remains for you to go out and get it. But be sure you are properly equipped to handle this business. Stock up now with HINDLEY'S SPECIALTIES and be prepared to save time, grief and expense on every job.

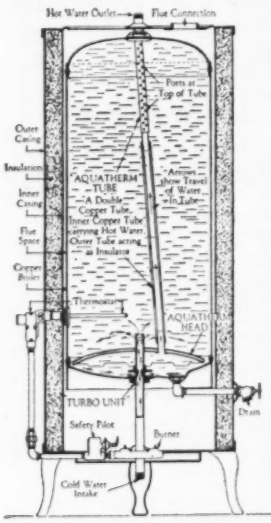
HINDLEY MFG. CO.
VALLEY FALLS, R. I

HINDLEY'S *Plumbers'* SPECIALTIES

# DAHLQUIST "TURBO UNIT"

***Keeps hot water clean***

**The only fundamental improvement made in hot water storage tanks during the past 40 years.**




## SAVES GAS— STOPS BURNOUTS

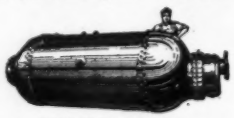
**Prevents sediment from accumulating and keeps hot water clean and fresh.**

This latest invention by Theodore W. Dahlquist is supplied in all DAHLQUIST COPPER BOILERS and absolutely stops sediment from forming on the bottom of the boiler. No need to drain a Dahlquist boiler every few weeks. The TURBO prevents sediment from forming—keeps the hot water always crystal clear, fit for drinking—prevents costly burnouts—reduces cost of gas 50%. Whether your need is for a home range boiler, an automatic hot water storage system or a commercial heavy pressure storage boiler, learn more about this remarkable improvement before you order.

*Write for descriptive catalog.*

**TURBO AQUATHERM**
*(Under fired automatic hot water storage system)*

ALL TYPES OF COPPER BOILERS



2000 Gal. Boiler

**DAHLQUIST MFG. COMPANY**

60 West 3d Street So. Boston, Mass.

## After All Arguments Are Exhausted
## SERVICE IS THE TEST

FEDERAL FLOAT

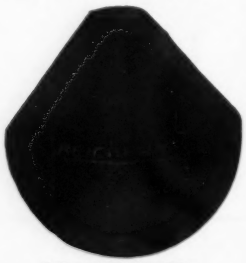
Reichert Tank Balls and Solderless Floats are made of best materials to assure long, satisfactory service on any job—and an attractive profit for you.

Leader Tank Balls seat perfectly every time.

Reichert Floats are made of heavy gauge sheet copper, two sections seamed in securely. The reinforced spud makes them the strongest on the market. They stand up even when service is particularly severe such as in factories, schools and public buildings.

Every float and tank ball thoroughly inspected and tested. They last . . . and last . . . and last.

Write for literature or see your jobber.



THE LEADER TANK BALL

NRA MEMBER U.S. WE DO OUR PART

**The Reichert Float & Mfg. Co.**
2238 Smead Avenue
Toledo, Ohio


drains, extra heavy stable cesspools, combination rainleader and cesspool, bell trap cesspool with hinged lid, sand trap, shower drain and trap, round pattern garage sand trap, open iron sink strainer, sink couplings, sink brackets, and fire pot heaters, etc.

### Large Folder on Thermostatic Water Mixers

Fulton Sylphon Company of Knoxville, Tenn., has just issued a large folder illustrating and describing in detail its thermostatic water mixers, which are designed to maintain set temperatures with extreme accuracy, unaffected by pressure changes, suited for installation behind plaster or tile walls, with wall plate and adjustment handle the only exposed parts.

### Two Folders Announce New Shampoo and Lavatory Faucets

The Royal Brass Mfg. Co. of Cleveland, Ohio, has just issued two new folders entitled "Presenting New Products by Royal" and "Shampoo and Lavatory Faucets by Royal." These folders describe and illustrate compression double bath faucets and compression single laundry tray faucets, compression garden hose faucets, garden hose valves, laundry tray faucets, combination laundry tray faucets, combination lavatory and shampoo faucets, and pantry faucets.

### Circular on Copper Coils and Water Motors

The Union Coil & Manufacturing Co. of Pittsburgh, Pa., has just issued a circular illustrating and describing in detail its copper coils and water motors for instantaneous automatic water heaters. The circular stresses the point that this concern's coils are made by the "sand-packed" method, insuring an absolutely true and even gauge without injury in any way to the smooth and unbroken inner wall surface.

### The Deming Company Issues New Catalog

The Deming Company of Salem, Ohio, has just issued its catalog No. 30, consisting of 160 pages, 8½x11 in. in size, illustrated with new and larger photographs and drawings of its pumps, water systems, and auxiliary parts and equipment. The typography of the book is also entirely new and attractive. All information, including general descriptions, engineering information, tables and other technical data, is carefully arranged for easy reference. Among many new products featured in this catalog are new shallow well pumps and water systems, new worm drive deep well pumps and water systems, and improvements in other lines.

### Decatur Pump Company Issues New Catalog

The Decatur Pump Company, Decatur, Ill., has just issued its catalog No. 34, consisting of 32 pages, 8½ by 11 in. in size, illustrating and describing in detail this concern's line of super turbine pumps, turbinette water system, domestic water supply systems and complete water systems as well as accessories, including couplings, fresh water checks, water gauges, etc. Much space in this catalog is also devoted to the company's condensation return tanks and self-priming centrifugal pumps. The value of the catalog is greatly enhanced by the addition of many exceptionally convenient tables and charts.

### Bulletin About Copper Range Boilers and Tanks

The Gerstein & Cooper Co., South Boston, Mass., has just issued a bulletin to the trade stating that beginning immediately a 20-year service guarantee will be given on all its copper range boilers and tanks. Provisions are that these products must be installed by a licensed master plumber and conform to local and state regulations; that pressure, temperature, vacuum relief valves must be installed and maintained in working condition. These guarantees are attached to each boiler shipped. They must be signed by the installing plumber, his address and where installed, and is then subject to final signature of the manufacturer.

# WOMEN'S ACTIVITIES

*By DOROTHY EDWARDS*

## National Women's Auxiliary Convention a Splendid Success

The Women's Auxiliary of the National Association of Master Plumbers held its annual convention in the Mayflower Hotel at Washington, D. C., May 28 to 31, with a big attendance and elected the following officers for the ensuing year:

President, Mrs. Robert Liss, Chicago (Re-elected).
First Vice President, Mrs. F. C. Kuetemeyer, Milwaukee.
Second Vice President, Mrs. O. G. Johnson, Minneapolis.
Third Vice President, Mrs. George Doench, Cincinnati.
Treasurer, Mrs. J. H. Heidweiler, Trenton, N. J.
Historian, Mrs. E. D. Hornbrook, Kansas City, Mo.

The Washington Auxiliary Convention Committee had prepared a comprehensive program for both business and entertainment, which was followed.

The Past Presidents' Club held a meeting on Monday

**Mrs. Robert Liss, Chicago, Re-elected President of the Women's Auxiliary to N. A. M. P.**

afternoon at the Mayflower Hotel, followed by tea and entertainment.

The Mayflower Hotel was also the scene of a reception and dance on Monday evening.

On Tuesday morning the members of the Women's Auxiliary attended the opening of the National convention. In the afternoon they were taken on a sight-seeing trip; and in the evening they saw "A Night in Monte Carlo" at the Mayflower Hotel.

On Wednesday morning they gave a breakfast at the Mayflower in honor of the National Officers and National Directors. Later in the morning the members of the Women's Auxiliary attended memorial service of the National Association.

The first business session of the Women's Auxiliary was held on Wednesday afternoon at 2:30 o'clock and was

**At the National Auxiliary Convention. From left to right: Mrs. Thos. W. Mullins, Mrs. W. Ebner, Mrs. George Arnone, and Mrs. A. Platt, all of Bronx, New York City**

opened by Mrs. Robert J. Barrett, who introduced the national officers. Mrs. W. E. McAndrew of Tampa, Fla., introduced the members of the board of directors.

Mrs. Robert Liss of Chicago, president of the Women's Auxiliary, thereupon called the convention to order. This was followed by a salute to the flag.

Mrs. W. E. Miller led the singing of the National Anthem, while Chaplain, Mrs. Rose Friend of Milwaukee offered the invocation. Mrs. Eugene McGolrick of Washington gave the Address of Welcome, and Mrs. R. G. Schwartz of New Orleans responded in a most cordial manner.

Mrs. E. D. Hornbrook of Kansas City, past president and historian, at this point read a most interesting "History of the National Auxiliary."

Following President Mrs. Robert Liss' appointment of committees, Mrs. Oscar G. Johnson of Minneapolis presided at the memorial service.

On Thursday morning all auxiliary members enjoyed a Dutch Treat Breakfast at the Mayflower Hotel.

Following this breakfast, the second business session was called to order by Mrs. Robert Liss, president. This session was addressed by John J. Calnan, vice president of N. A. M. P., who expressed the hope "that your organization will continue the noble work it has begun and that it will long exist and be a helpful aid for our National Association."

The auxiliary voted to support the program of making the public sanitation conscious.

In the afternoon session, committee reports were heard, and the election of officers took place with the result given at the beginning of this report.

Following the introduction of the new officers, the convention adjourned sine die.

On Thursday evening all auxiliary members attended the President's Ball in the Mayflower Hotel.

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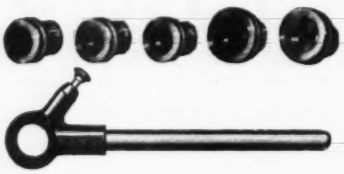

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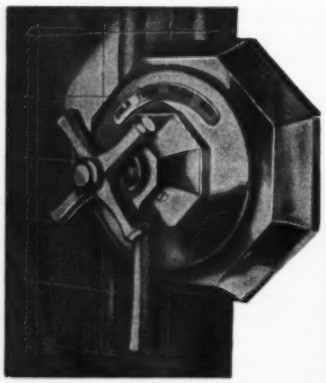

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## Connecticut Auxiliary Holds Fifth Annual Convention

The State Auxiliary of the Master Plumbers' Association of Connecticut held its fifth annual convention at the Elks Club in Meriden, Conn., May 9, under the guidance of its president, Mrs. C. A. Hjerpe of New Britain.

The day's activities included a luncheon, card party, three addresses and participation in the Connecticut Master Plumbers' annual convention and banquet at the Masonic Temple.

The following officers were elected for the ensuing year: President, Mrs. Charles Weitzel, Wilton; vice president, Mrs. Juddie L. Langren, Berlin; treasurer, Mrs. R. T. Rock, Bridgeport; sergeant-at-arms, Mrs. A. Dressel, New Britain; trustees: Mrs. Arthur Blanchard, Waterbury; Mrs. M. A. Brown, Middletown, and Mrs. A. A. Mills, New Britain.

## Indiana Auxiliary Holds Annual Meeting

The Ladies Auxiliary of Indiana held its annual convention at the Lincoln Hotel, Indianapolis, Ind., on Tuesday and Wednesday, May 15 and 16.

On Wednesday the delegates were entertained at a luncheon and theater party.

At the business session on that day all officers were reelected as follows: Mrs. Earl L. Clevenger, Muncie, president; Mrs. Edward Kanney, Laporte, vice president; Mrs. Max Baker, Muncie, secretary-treasurer.

The convention decided to send greetings and a report of the meeting to all members unable to attend.

Wednesday evening the auxiliary joined the men at the annual banquet and dance.

## North and Northwest Auxiliary of Chicago Plans Card Party

The North and Northwest Auxiliary of Chicago met on May 23 with an attendance of sixteen members. A donation of $25 was made to the student loan fund. A card party and dance is to be given by the members on the evening of June 14 at Kirchhoff's Palm Garden, 4711 Milwaukee Avenue at 8 p. m.

After the meeting, cards were enjoyed followed by a delicious luncheon prepared by Mrs. F. Pearson. The next and last meeting of the season is to be held in the Lantern Room of the Drake Hotel on Wednesday noon, June 27.

## Many Activities Take Place at Minneapolis

On April 25 the Minneapolis, Minn., Auxiliary held a card party at Purity Bakery. Mrs. H. C. Harvey was chairman, assisted by Mrs. B. C. Miars, Mrs. Oscar Johnson, Mrs. Hugh Fox, Mrs. Victor Beaudry and Mrs. A. G. Nelson. There were 43 tables.

Mr. and Mrs. Victor Beaudry had a card party at their home on April 19, with 8 tables. Mrs. H. C. Harvey and Mrs. Otto Nelson were assistant hostesses. Mrs. A. G. Nelson opened up her home for a card party on April 12, with Mrs. B. E. Miars and Mrs. Hugh Fox assisting.

In cooperation with the Community Chest visiting plan, the auxiliary met on April 17 at the Northeast Neighborhood House. The hostesses were Mesdames: George Shoppe, Walter Dahlstrom, A. Harris and A. Sachs.

The auxiliary, which is a member of the 5th District Federated Clubs, has interested this club in helping the plumbers' association try to pass the sanitary bill which is pending in Minneapolis.

The auxiliary met at the home of Mrs. Royal Berg for its luncheon meeting on May 15 with Mesdames Oscar Johnson, Emil Nordberg and Arnold Bing as assisting hostesses.

## Queensboro Charity Card Party A Success

There were 185 men and women present at the charity card party sponsored by the Queensboro Branch, Inc., Women's Auxiliary of Association of Master Plumbers of the City of New York on May 12, at the Amber Lantern. A lovely china dish divided into four compartments with a handle was the table prize. Those winning at cards and bunco were: Mrs. H. Ochs, Mrs. Gill, Mrs. M. S. Clowes, Mrs. Fred Brown, Mrs. Esther Billharz, Mrs. N. P. Donohoe, Vincent Sarro, Elsie J. Lohse, Mr. Sommer, G. Leberms, Peter Nielson, Mrs. William Bloeth, Charles Werber, Rita H. Skoney, Charles Burdie, Anna M. Lenahan, Mrs. C. Burdie, Mrs. E. J. Dume, H. Sersen and John E. Dempsey. Refreshments were served after cards, and Mrs. Rapp, Mr. Raymond Noonan and trio furnished the entertainment. Nassau, Brooklyn, Bronx, and Manhattan auxiliaries were represented at the card party.

## Philadelphia Auxiliary Holds Annual Birthday Party

The annual birthday party of the Philadelphia auxiliary was held on April 18 and was attended by all members and a number of visitors. The committee for this party was in charge of Mrs. Feeney who was assisted by Mrs. G. Hicks, Mrs. G. Diggins, Mrs. E. Henderson, Mrs. D. Worrell, Mrs. R. H. Pflug-Felder, Miss M. Gosh and Mrs. W. H. Beahm. During the course of the luncheon, Mrs. George Diggins, president, was presented with a lovely hand bag as a token of friendship of the committee.

## Plans for Party Made by Rochester Auxiliary

The Ladies Auxiliary of the Associated Masters Plumbers of Rochester, N. Y., held its meeting at the home of Mrs. Ralph Hanson, 38 Barons Road, Wednesday, May 9, at 2:15 p.m. Plans were made for a June party. Cards were played and prizes awarded at each table.

## Rock Island-Moline Auxiliary Holds May Meeting

The Rock Island-Moline, Illinois, Auxiliary met at the home of Mrs. C. C. Rosenfield on May 14. Following a brief business meeting, bridge was played with high scores being won by Miss Mildred Lamp, Mrs. A. N. McNeil and Mrs. E. L. Householder. At the conclusion of the games, the hostess served refreshments.

June 11th is the date for the next meeting at the home of Miss Mildred Lamp, 1513 Tenth Avenue, Rock Island.

## Boston Auxiliary Holds Monthly Meeting

The Boston, Mass. Women's Auxiliary met at the home of Mrs. Arthur I. Russell, Newton, on Tuesday evening, May 15. Mrs. A. Gordon was welcomed into the association. Mrs. William McAuliffe and Mrs. John Downey entertained the group with several selections. After the meeting, refreshments were served.

## Oregon State Auxiliary Holds Annual Convention

The members of the auxiliaries in Oregon held their annual convention on May 11 and 12, in Portland, in connection with the state convention. Miss Vivian Widmer gave a report of last year's national meeting at a luncheon on Saturday. Officers were elected as follows: Mrs. Milo Rassmussen, Salem, president; Mrs. Fred Van Hoomissen, Portland, vice president; Mrs. Ed. O. Pratt, Salem, secretary, and Mrs. George W. Kendall, Portland, treasurer. The sessions were presided over by Mrs. R. D. Rennie, retiring president, who had served for two years.

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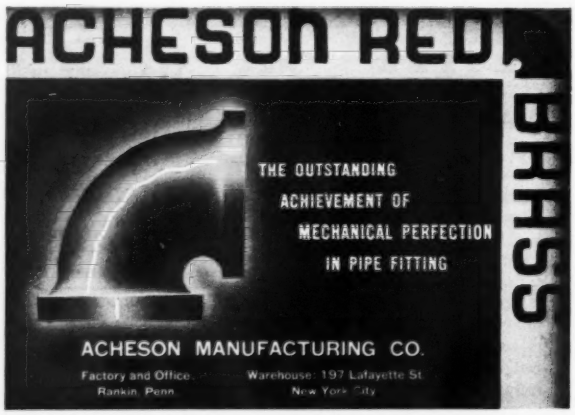

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## Bronx Auxiliary Holds Successful Card Party

A well attended card party was held on April 26 by the Bronx, N. Y., Auxiliary for the benefit of a welfare camp. Members were present from Manhattan, Brooklyn, Queens and Nassau Counties. Prizes went to Mrs. Woodward Ebner, Mrs. E. A. Pautsch, Mr. and Mrs. M. Hayden, and Mr. William Kroepke. Each table received an attractive flower holder as a prize. The auxiliary wishes to thank the friends and supply houses for their assistance in making this affair successful both socially and financially. Mrs. Henry Kroepke was chairman of the committee in charge.

## Cincinnati Auxiliary Holds Card Party

The Cincinnati, O., Women's Auxiliary held a card party in the auditorium of the Cincinnati Gas and Electric Company building on Monday afternoon, April 30, with a large attendance. A lovely prize was given to each table. Two large cakes were donated by some good samaritan, not a plumber's wife, and brought a good sum for the auxiliary's treasurer. The hostess of the Gas and Electric Co. spoke on "Illumination," and the talk was very interesting. After the lecture the hostess entertained with a delightful tea. This affair was a grand success, the financial end most pleasing, since it replenished the treasury to a considerable extent.

## California Convention Welcomes First Woman Delegate

"This is the first time I have ever attended a master plumbers convention," said Mrs. Jessie V. Trueblood of Modesto as she received her delegate's badge at the registration booth at the Hotel Senator in Sacramento, where the California State M. P. A. recently held its 33rd annual convention. Mrs. Trueblood took a keen interest in the proceedings and regularly attended every session. Mrs. Trueblood is carrying on the plumbing business formerly conducted by her husband, H. A. Trueblood, lately deceased.

## Denver Ladies Continue to Be Active

Mrs. E. B. Clayton entertained 17 members of the Denver, Colo., Auxiliary at her home on May 9. Later cards were played with honors going to Mrs. V. A. Kandorf and Mrs. Julia Hensler.

A spaghetti luncheon was enjoyed on April 18 at the home of Mrs. F. X. Bordeau. Mrs. Julia Hensler and Mrs. F. X. Kreidl won the honors at cards.

## Dayton Auxiliary Elects Officers

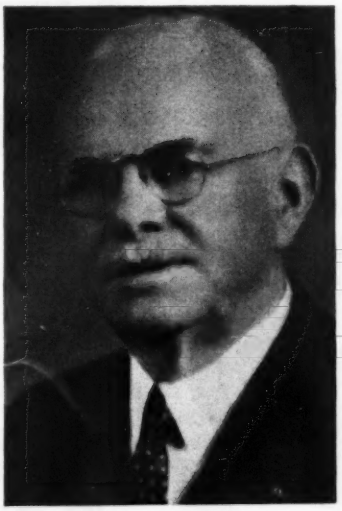
The Dayton, Ohio, Women's Auxiliary met on April 19 at the home of Mrs. Fred Reiniger. The election of officers took place following the submission of names by the nominating committee. Those selected to head the auxiliary for the ensuing year are: Mrs. Henry Saunders, president; Mrs. Henry Blank, vice president; Mrs. Ed. Metcalf, secretary, and Mrs. Walter Wilhelm, treasurer. A social hour was spent in playing cards, and later refreshments were served.

On May 11 the auxiliary held a May day six o'clock dinner and later cards were played. There were about 50 master plumbers, wives, sweethearts and friends present. The entertainment committee is to be congratulated for arranging such a delightful party.

The May meeting of the auxiliary was held at the home of Mrs. John Haas. After the business session cards were enjoyed.

## George F. Uber, Charter Member N. A. M. P., Called by Death

George F. Uber, charter member of the National Association of Master Plumbers, died at his home in Philadelphia on Sunday, May 6, following an illness of three weeks, in his 79th year. Mr. Uber had been engaged in the plumbing business at the corner of Thirteenth and Fairmount Streets in Philadelphia since 1876. He was one of the organizers and formerly president of the Master Plumbers' Association of Philadelphia. He was also a charter member of the National Association of Master Plumbers and was present at its first convention in New York City

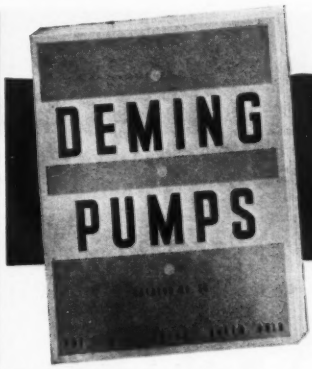


George F. Uber

in June, 1883, when the National Association was organized, and he made the extraordinary record of attending each one of the next fifty annual National conventions. From June, 1920, to June, 1921, under the administration of D. F. Durkin, Jr., he served as secretary of the National Association of Master Plumbers, and was later a member of its board of directors. He was a member of the Masonic fraternity for 58 years. He was buried Wednesday, May 9, with funeral services at his residence on North Broad Street. The interment took place at West Laurel Hill Cemetery. He is survived by his widow and a daughter.

## Charles W. Light Dies in His 70th Year

Charles W. Light, founder and proprietor of the Eureka Heating & Ventilating Company in Saginaw, Mich., died suddenly of heart failure at his office in that city on Monday morning, April 2, in his 70th year. Mr. Light was born May 25th, 1864, in Greenville, Mich., but he went in his boyhood with his parents to Rochester, N. Y. In 1886 he came to Saginaw, Mich., and established the Eureka Heating & Ventilating Company, which became one of the leading firms in its line in the Saginaw valley, and which made its own boilers until about 20 years ago, when Mr. Light became representative of the Burnham Boiler Corporation and installed its line of steam and hot water boilers in the Saginaw territory. Mr. Light took an active interest in civic affairs and he was a member of several fraternal organizations. Three daughters and four sons survive him.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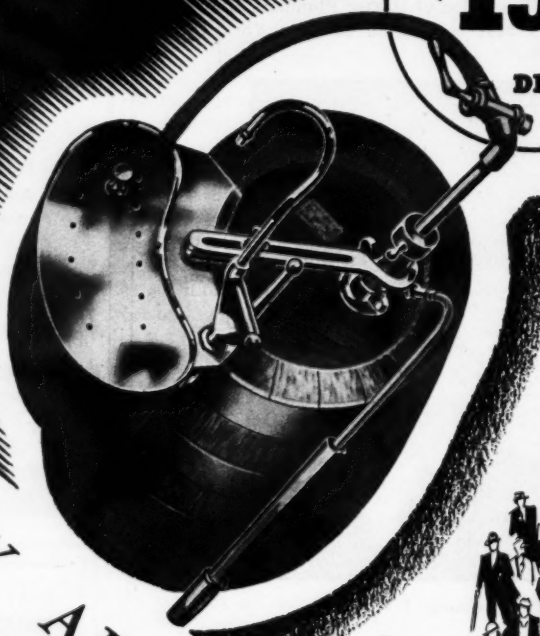

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The piping shown in the photograph at the bottom of this page presents an interesting example of providing the piping facilities for a bar installation. The job is located in Chicago, and, of course, has come under the regulations of that city. The piping has been installed with the idea of providing a vent for each of the sink traps.

Since the bar is placed out in the room and since it is impossible from a standpoint of convenience and appearance to run a vent line in the conventional manner up from the bar, the provisions seen in the accompanying photograph were resorted to. It will be observed that each sink trap is provided with a vent rising out of the branch connections to the trap. The main drain serving all of the traps is seen running horizontally above the floor until it reaches the left side of the picture where it is dropped into the concrete so as to run to the rear-wall stack under the floor level.

Essentially the same method has been used in carrying the vent line to the rear wall, where it connects into the vent stack. It will be noted that the horizontal vent line, connecting the individual trap vents, drops to a point just below the surface of the floor at the left hand side of the illustration. It runs back to the rear wall and

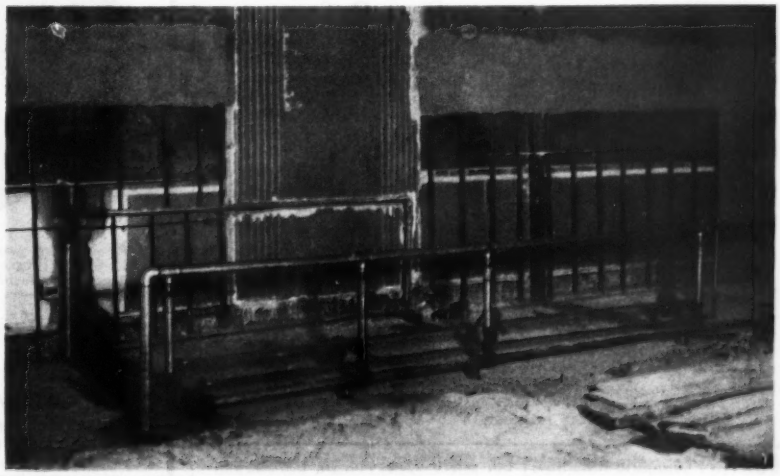

**Fig. 1. View of drainage and vent piping installation made for both a front and rear bar. The rear connections are for a refrigerator**

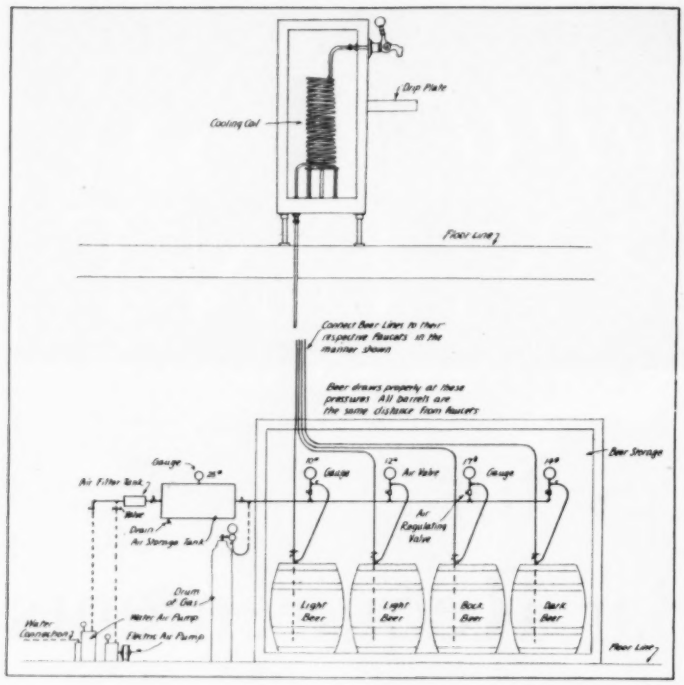


**Fig. 2. This diagram shows a method for connecting pressure to beer barrels so as to control individually the head on each barrel**

is seen rising in a chase in the wall until it reaches the proper elevation where it connects into the main vent stack. In other words, in order to provide an unobstructed passageway for attendants at the bar, what may be termed an inverted loop, has been installed.

As a protection for the installation in general, the plumbing contractor doing this work made it a point to paint that part of the piping imbedded in the concrete with a tar preparation.

The piping on the rear wall was installed to serve a refrigerator planned to be included in the back bar installation. Note this also is completely vented by the loop which connects to the vent stack just above the vent connection for the front bar. A cleanout has been installed in the refrigerator waste line to facilitate rodding in the event of a stoppage.

In-so-much as the refrigerator is a food storing unit, good practice calls for the indirect connection of its drain to the drainage system. Accordingly, it will be observed from the accompanying illustration that the

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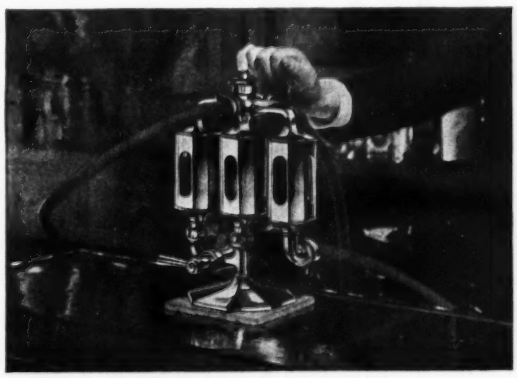

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We are not so presuming as to say that Morrison Quality Beer Fittings will make poor beer taste good . . but we do know that proper serving makes good beer taste better. MORRISON QUALITY BEER FITTINGS from taps to faucets . . are made of the finest quality materials . . machined to the close precisions of a fine watch . . and built to stand up under the hardest kind of everyday service. Their whole purpose in life is to provide for a better serving of beer. Write today for FREE Folder and Prices.
MORRISON BROTHERS CO.
BEER EQUIPMENT HEADQUARTERS
DUBUQUE, IOWA

trapped refrigerator drain connection has been installed to permit the installation of an indirect drainage connection. Under these circumstances, in the event that the drainage line should become stopped at a point beyond the connection of both the refrigerator drain and the front bar drain, any waste from the front bar sinks can only back up into the refrigerator drain and spill on the floor, thus calling attention to the stoppage very promptly with no danger of damage to the contents of the refrigerator.

The beer drawing installation for this bar is shown diagrammatically in Fig. 2. One of the outstanding features of this beer drawing hook-up is the provision which has been made for maintaining different pressures on the different barrels. Although there is a common pressure on the line serving each of the barrels, with this hook-up, it is possible to get regulated pressures on each individual barrel. This is because of the installation of a pressure regulating valve on the line where the barrel connection is taken off. The hook-up shows how either an electric air pump, a hydraulic air pump or a drum of $CO_2$ gas may be used. The air regulating features are independent of the pressure equipment.

---

# How Many Glasses in a Barrel?

*Because this question has a pratical significance etc.*

THAT question can be easily answered from the standpoint of accurate measurement by anyone who knows that there are 31 gallons in a barrel, 128 ounces in a gallon, and by simple multiplication and division arrives at the correct answer of 496 eight-ounce glasses.

However, in actually drawing beer over the bar and serving it to the customers, if an even eight ounces of fluid were in the glass they would refuse it, and rightly so, because any glass of beer drawn through the faucet, which did not have the correct collar of foam, would be flat and tasteless. Therefore, an eight-ounce glass, composed of a little more than six ounces of fluid and the balance foam, would show a potential 570 eight-ounce glass which could be served from a full barrel, provided there was no waste whatever. Yet, because there is a certain allowance made for waste, it is accepted that the actual number of eight-ounce glasses which can be served from a full barrel of beer is 420.

Therefore the greatest hazard with which the owner of a beer bar today has to contend is this unknown, unchecked difference between the number of potential glasses which he pays for in every barrel delivered to him and the number of glasses for which he receives the customers' dimes across the bar.

### A SURPRISING RESULT

Here is an instance reported by one investigator who entered a prominent hotel bar in the city of Chicago and asked the bartender how many eight-ounce glasses of

beer he drew from a barrel of beer and received the usual answer of 420 glasses. The meter was placed upon one faucet and the result revealed a startling discrepancy between the bartender's belief and the profitable service which would have resulted if he really had drawn 420 glasses from each barrel.

The report, made after fourteen complete days during which time twelve full and two half-barrels of beer were served, showed a total average sale per barrel of 384 glasses. This means that $38.40 was the total receipt per barrel instead of $42, as the bartender supposed.

Other investigators asked this same question regarding the estimated number of eight-ounce glasses which the bartender addressed felt he obtained from each barrel, and invariably received the same estimate of 420 glasses. When the meter was installed, the bartenders in question were amazed and chagrined to find that they actually produced, in many cases, nearly a hundred less glasses than they thought—a fact which accounted for the proprietor's loss, and also served as a check upon short-weight barrels and barrels that were only partly full.

#### THOUGHT BARREL WAS EMPTY

Another evidence of the value of metering was reported by one investigator who found that many bartenders were taking barrels off the taps, believing them to be empty when they were still nearly one-third full, thus throwing away all the profits that the barrel contained. This waste was due to the fact that, when a barrel is about two-thirds empty, the beer may become flat and cloudy, very similar in appearance to that of the last glassful which a barrel contains. A meter by providing the bartender with a record of the number of glasses already withdrawn from the barrel, showing that the barrel still contains fifty or sixty glasses, reminds him that the flat appearance of his beer comes from lack of pressure rather than from an empty barrel.

Obviously, the outfitter or dealer who is in position to give customers information of this kind, has an advantage. If the tavern owner can show an added income of as much as $3.60 on every barrel of beer, it's a mere matter of arithmetic for him to figure the value of metering according to the number of barrels of beer.

# Importance of Refrigeration

Few beverages require as delicate handling as does draught beer. Among the essentials for a good glass of beer are the following, each of which is directly influenced by the refrigeration practices involved:

Temperature: 42° to 45°.

Taste: Zestful, tangy; not bitter or flat.

Carbon Dioxide Content: As delivered by brewer. More carbon dioxide makes beer wild; less causes beer to be flat.

(Continued on Page 171)

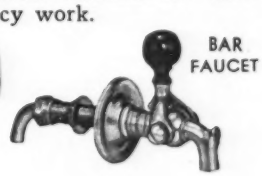

# The Busy Season

*for overhauling*

# BEER EQUIPMENT

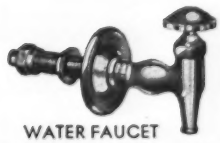
THE widest range of appliances and parts needed for replacement and installation work is included in the Imperial line of beer dispensing equipment. The line is thoroughly complete; whatever is required at short notice can be supplied without delay.

Speed and accuracy in making installations is greatly aided by using Imperial service tools, which are in especial demand for emergency work.



BAR FAUCET

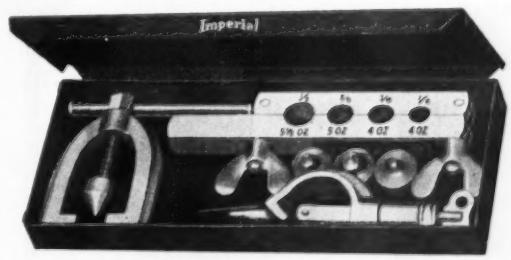
CARBONIC GAS PRESSURE REGULATOR



WATER FAUCET

DISTRIBUTING PIPE

ICE BOX COUPLING




TUBE CUTTING AND FLARING KIT

*Write for the Imperial beer equipment catalog No. 440*

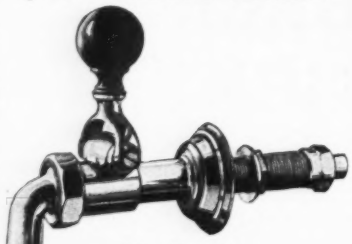
**IMPERIAL BRASS MFG. CO.**

1231 West Harrison St. CHICAGO

**GRAND**

*Rely on the Grand Line for all your needs. Write for Beer Dispensing Equipment Catalogue and Picnic Pump Circular.*

QUICK OPENING FAUCET



No. 2000

TAPPING TUBES OR RODS

WATER AND SODA FAUCETS

No. 2100

DISTRIBUTORS FOR AIR OR GAS

No. 2402

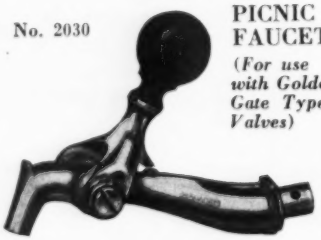
PICNIC PUMP

2541

No. 2030

PICNIC FAUCET

*(For use with Golden Gate Type Valves)*



ICE BOX COOLER COUPLINGS

No. 2420

GRAND TAPS Peerless Type

No. 2432

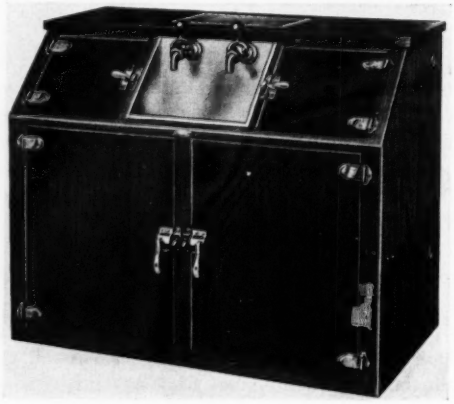
*Manufactured by*

**GRAND HAVEN BRASS FOUNDRY**
**GRAND HAVEN, MICHIGAN**


# Products for the Beer and Bar Equipment Dealer

### Metal Dispensing Units

Recently added to the line of beer dispensing units manufactured in various types by the company, is a selection of all metal dispensing units, one of which is shown above. This unit is finished in a walnut wood grained metal exterior with slightly rounded corners.



The faucets, drip and panels are finished in Enduro steel. All units in this selection of metal dispensers are full cork insulated and metal lined. "Any establishment, regardless of the character of its decoration, would be enriched with one of these new beer dispensing units," comments the maker. "Our engineers have been constantly striving to develop new equipment that would give better service and have greater durability." Made by The Bishop & Babcock Sales Co., Cleveland, Ohio.

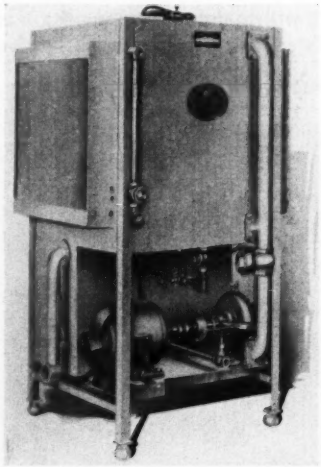
### For Polishing Gold, Silver, etc., Ware

The company named below markets a mineral paste polish for giving lustre to gold, silver, plated ware, nickel, plate glass and fine metals generally. To meet the special demand from hotels, restaurants, soda fountains, etc., the product is packed, for convenience, in five-lb. pails. Say the makers: "Easy, quick and pleasant to use, contains neither acids or grit to harm the most beautiful surface." The polish is manufactured by The Jay Company, Washington, N. J,

Readers will find in this section information and news regarding products for use in making their beer dispensing sales and installations

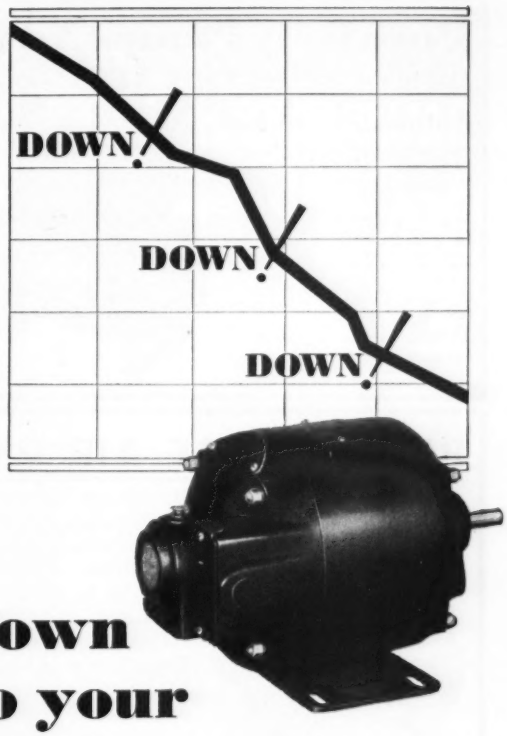
### For Getting Dishes Washed

The dishwasher shown is one of a line of various sizes and types. It is a single tank model, single basket machine suitable for places serving up to five hundred persons per meal. Equipped with curtains and automatic rinse. Capacity 1,000 to 6,000 pieces per hour. Size, 27 in. by 35 in. by 57 in. high. Tank capacity is 25 gal. Motor 1 HP. Pump capacity, 150 GPM. Made for gas burners or steam injector. Is constructed of galvanized iron, copper and monel metal. This equipment is made by Fearless Dishwasher Co., Inc., located at Rochester, N. Y.



### Beer Cooling System

Pictured is a unit having a 3 gal. capacity, silver lined throughout. Proper valves, say the makers, control the conditions encountered in beer dispensing. Will give uniform beer at controlled temperature. Has patented circulating system which cools inside and outside of unit. Makers stress the fact that no matter how good beer is, it must be properly served in order to satisfy the customer. With the unit, it is said further, there is no drawing off of beer, and no place for bacteria to develop. Manufacturer: The Kool-A-Rator Company, Subsidiary


**Down go your service costs when G-E MOTORS drive your automatic beer pumps**

Type RSA, high starting torque
Type KH, low starting torque

And here are four important reasons why they'll lower your service costs and simplify installation:

1. Drip-proof end flanges keep dripping liquids out of motor — lower maintenance
2. Large-capacity oil well — oiling required only once a year
3. Built-in terminal box — no leads to splice or solder
4. Rotors are cushioned to prevent objectionable noise from end-bumping caused by reciprocating loads

For further information on these "care-free" motors and other G-E products, such as control, wire and cable, etc., write to General Electric Company, Dept. 6B-201, Schenectady, New York.

070-7

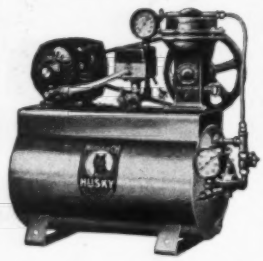
GENERAL ELECTRIC

**Positively Pumps No Oil!**
**Dayton's "WHITE CAP"**
**Automatic, Oil-less**
**BEER PUMP**

EXCLUSIVELY FOR BEER!
Ideal for dispensing draught beer in large volume because it assures a good supply of clean, dry compressed air at all times. No pistons or rings—prevents pumping of any oil whatsoever into air line. ¼ HP repulsion-induction motor—10 gal. tank—cuts out at 30 lbs. pressure and in at 20 lbs.—quiet operation—V-belt driven. Size 24"x25"x12". Weight—80 lbs. net. Ask about Model Y-100—Also Air Compressors from 1 to 50 cfm.

The DAYTON AIR COMPRESSOR CO.
"49 Years of Specializing"
425 Valley St., Dayton, Ohio

**PUMPS PURE AIR ONLY**



Bronze bearings throughout. Force feed lubrication. Quiet in operation. Equipped with ¼ h. p. repulsion induction motor. Oil filter unnecessary. Completely assembled ready to install. Guaranteed two years.

*Write for distributors' proposition.*

**The Monarch Engineering Co., Dayton, Ohio**

**Beer Dispensing Equipment**

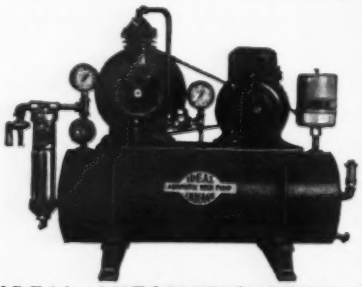
*Bar Faucets. Tapping Rods, Beer Dispensing Equipment and Fittings; Coils, Air and Gas Regulators and pumps,*

*for*

**26 Years!**

**ILLINOIS BRASS MFG. CO.**
224 NORTH ADA STREET CHICAGO, ILL.

**IDEAL** *Automatic Electric* **BEER PUMP**
*WITH AIR FILTER*



A QUIET and complete automatic unit for supplying air pressure for the dispensing of draught beer. The cost of operating this unit is less than one cent a barrel. Especially priced at $67.00, complete. Without filter $62.50.

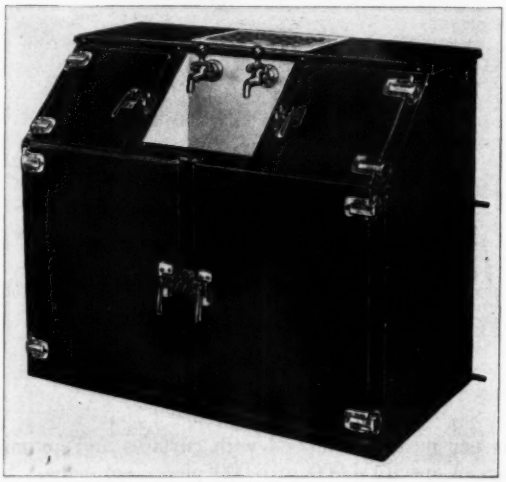
*Write for exclusive dealer proposition*

**IDEAL AUTOMATIC BEER PUMP COMPANY**
801 WEST WASHINGTON BOULEVARD, CHICAGO
*Telephone Haymarket 5680*

of General Iron & Bronze Works, which company is located at 16 William St., Newark, N. J.

### All-Steel Service Bar

The service bar is rapidly becoming a thing of beauty as well as utility. The unit shown is of all-steel, sturdy construction. Finish is black Dulux, alcohol-proof, baked enamel, with stainless steel top drain and porcelain sink. It is fitted with chrome finish hardware. Avail-



able with or without speedway water faucets. "Features of this service bar," advise the makers, "are its all-steel construction, high efficiency and its accessibility, making it exceptionally easy to clean." The company indicates that it has also available a complete line of beer and bar equipment, popularly priced. Manufacturer: Puffer-Hubbard Manufacturing Co., 2600 Thirty-second Ave., S., Minneapolis, Minn.

### Pressure Important

To preserve the natural gas in draught beer, sufficient pressure should be maintained. This should be regulated by the distance between the faucet and keg. It is important that the gauge pressure is constant both day and night, and be careful not to tap leaky barrels.

Glassware used for serving beer should not be dried with a towel after washing, but merely inverted and allowed to dry by draining.

# Refrigeration—

(Continued from Page 167)

Collar: Not more than one-quarter the height of the glass; small bubbles and creamy.

Practically all the problems encountered in draught beer handling evolve from the necessity of keeping the beverage under refrigeration for preservation as well as for serving purposes. When draught beer is allowed to become warm the carbon dioxide content separates from the liquid and unless the beer is cooled again it is impossible to force the carbon dioxide back into solution. At no time should beer be stored in a temperature higher than 50°. If it is allowed to become warmer than that, the excess carbon dioxide will bleed away when the beverage is tapped, and when the brew is finally cooled its taste will be bitter and flat.

The problems involved in bottle beer cooling are much more simple than those with which draught beer is concerned. In the process of manufacture bottle beer is subjected to a pasteurizing treatment, making it unnecessary to store it in a temperature of 50° or below. The beverage is cooled to a low temperature only to give it a palatable taste.

### AIR CONDITIONING BRINGS BUSINESS

The average increase in sales and number of customers that follows the installation of air-conditioning equipment in restaurants and dining rooms is little short of astonishing. Tabulations have showed, for example, three paramount results, the significance of which is undeniable; average sales per customer increased 25% to 35% after the eating places were air-conditioned; there was an increase of 50% to 100% in the number of customers; and often more customers were served in the summer than were formerly served in the winter.

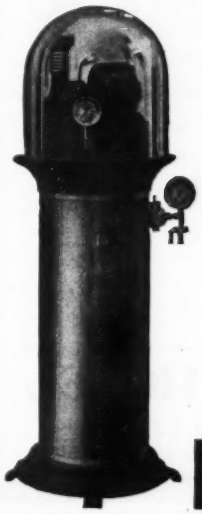
The increase in profits which has regularly followed the installation of air-conditioning equipment is easily explained. Cool and comfortable surroundings allow the restaurant proprietor to capitalize on the diner's natural inclinations. People buy not only heavier food but also greater quantities of food where it is cool; they are, in addition, not nearly as anxious to "eat and get out" as they are in places where the temperature and condition of the atmosphere are not ideal.

The elimination of odors and the maintenance of constantly comfortable temperature and humidity account for the growing demand for year-around air-conditioning. Interest in this all-purpose type is further stimulated by the fact that the change from summer to year-around equipment can be made at any time, and at a cost that is a mere fraction of the outlay for summer equipment alone.

Air-conditioning and the legal beer have supplied answers to the requests of so many food dispensers that the equipment problems to which they give rise have been the concern of restaurant men for some time. While it is well known that restaurant profits in recent months have been swelled considerably by beer sales, and that air-conditioning is coming more and more to influence dining room incomes, yet profitable attention may well be paid not only to these two elements but also to the more general refrigeration needs of the average eating place.

MAKE REAL MONEY
Selling the
JANETTE BEER PUMP
The Standard for 25 Years

WE WILL ASSIST YOU
with a
TIME PAYMENT PLAN



Which enables you to sell on a small down payment with convenient monthly terms on the balance and

YOU GET YOUR MONEY NOW

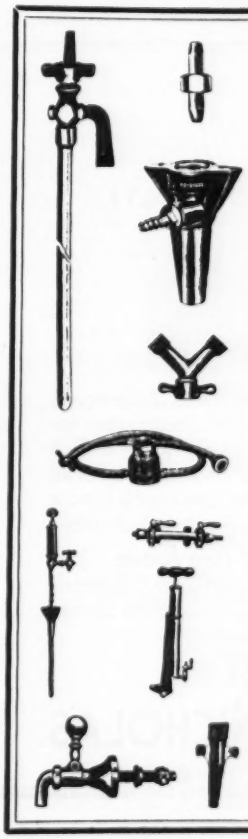
If you have a reputable firm with a good financial standing, and cover the tavern trade, there may be an excellent chance for you to act as our distributor with an

EXCLUSIVE TERRITORY

Write or Wire to

JANETTE MANUFACTURING COMPANY
556-58 West Monroe Street
Chicago, Illinois

Ask any Old Timer
about JANETTE Beer Pumps



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BEER FITTINGS
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Headquarters

A complete and extensive line of brass and rubber fittings. We manufacture rubber air hose, beer hose, washers of every description—leather, rubber, fibre.

Send for the new Keystone Catalog No. 60 before you buy. Get Keystone's prices. It will pay you.

KEYSTONE BRASS AND RUBBER CO.
811 Chestnut Street
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★ ★ ★

PRESTIGE

Zachary Taylor was the first President to reside at the old Willard —known modernly as "the Residence of Presidents." Enjoy its modern luxury — have the social distinction and convenience of this preeminent address.

Single Rooms with Bath $4 up
Double Rooms with Bath $6 up

*Moderate Prices in Main Dining Room*
*Popular Price Coffee Shop*

The Willard is two blocks from the White House, across the street from N. R. A., centering theatre and shopping districts.

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*The* WILLARD HOTEL
Washington, D. C.
*H. P. Somerville, Managing Director*



*Distinguished Atmosphere*
IN CINCINNATI

700 ROOMS
700 BATHS
700 SERVIDORS

$2
AND UP

75 MODERN SAMPLE ROOMS WITH BATH OR SHOWER AT $2.50 TO $5 PER DAY

$1.00 PER DAY EXTRA FOR ADDITIONAL OCCUPANT OF ROOM

A minute from everywhere... All bedrooms and suites modernized... Headquarters for the exclusive Town Club and Racquet Club ..A vital part of Cincinnati's polite Social Life... Successor to Cincinnati's famous St. Nicholas Hotel...The city's Quality Hotel

*Finest of Fine Foods*
Dining Rooms ... Lunch Room ... Cafeteria ..... Coffee Shop..... and the Sinton Cocktail Cafe reborn.

HOTEL
SINTON-ST. NICHOLAS
*AN ATMOSPHERE OF CHARM AND DISTINCTION*
JOHN L. HORGAN... *Managing Director*


# New Ideas From Patent Office

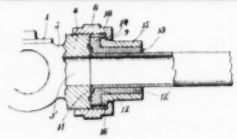
## Plumbing Department

1,932,882. Lead Pipe Ferrule. James Collins, Columbus, Ohio.

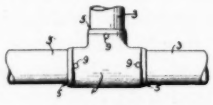
1,931,666. Joint. David E. Lindquist, Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan.

1,932,384. Soap Dispenser. William H. Alton, New York, N. Y., assignor to R. T. Vanderbilt Company, Incorporated, New York, N. Y., a corporation of New York.

1,932,117. Tank for Water Softeners. William L. O'Brien and Arthur C. Zimmerman, Dayton, Ohio, assignors to the Duro Company, Dayton, Ohio, a corporation of Ohio.

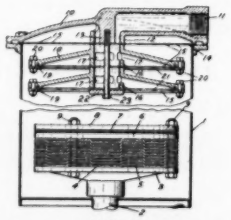


1,932,882
LEAD PIPE FERRULE



1,931,666
JOINT

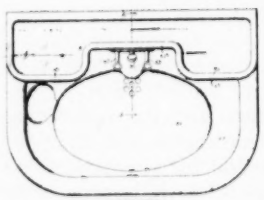
1,932,384
SOAP DISPENSER



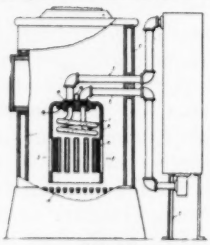
1,932,117
TANK FOR WATER SOFTENERS

1,930,633. Lavatory. Earl G. Watrous, Chicago, Ill.

1,931,003. Water Heater. Nathan K. Kramaroff and Richard K. Kramaroff, Philadelphia, Pa.



1,930,633
LAVATORY



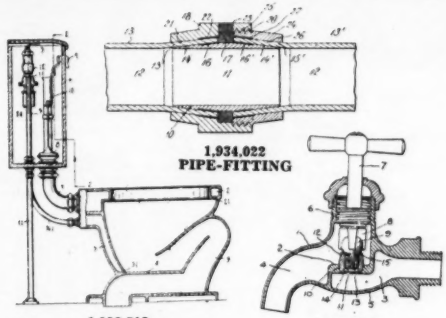
1,931,003
WATER HEATER

1,934,022. Pipe-Fitting. Leslie A. Wiggins, Rome, N. Y., assignor to Revere Copper & Brass Incorporated, Rome, N. Y., a corporation of Maryland.

1,933,518. Water-Closet Structure. Carl H. Zwermann, Robinson, Ill.

1,934,255. Valve. Thomas Bowler, North Vancouver, British Columbia, Canada.

1,933,370. Water Softening Apparatus. Andrew J. Dotterweich, Pittsburgh, Pa., assignor to Automatic Water Softener Company, Pittsburgh, Pa., a corporation of Delaware.

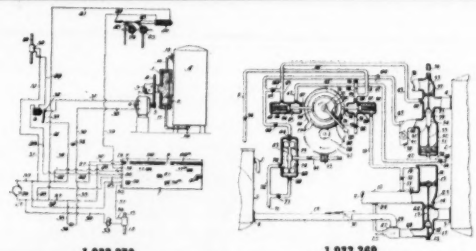


1,934,022
PIPE-FITTING

1,933,518
WATER-CLOSET STRUCTURE

1,934,255
VALVE

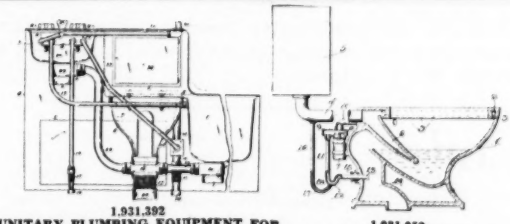
1,933,369. Water Softening Apparatus. Andrew J. Dotterweich, Pittsburgh, Pa., assignor to Automatic Water Softener Company, Pittsburgh, Pa., a corporation of Delaware.



1,933,370
WATER SOFTENING APPARATUS

1,933,369
WATER SOFTENING APPARATUS

1,931,392. Unitary Plumbing Equipment for Bathrooms. Ralph B. Otwell, Detroit, Mich.



1,931,392
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1,931,052
TOILET VENTILATOR

1,931,052. Toilet Ventilator. Harry Baitben, Milwaukee, Wis.

## Heating Department

1,928,442. Valve Mechanism for Oil Burners. Ralph S. Whaley, Seattle, Wash., assignor to Petroleum Heat and Power Company, New York, N. Y., a corporation of Delaware.

1,930,496. Temperature Controller Recorder Including Method and Apparatus. Chas. H. Wilson, Pelham, and Cuthbert J. Brown, Larchmont, N. Y., assignors, by mesne assignments, to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts.

1,930,750. Greenhouse Construction. Stephen H. Hart, Irvington, N. Y., assignor to Lord & Burnham Company, Irvington, N. Y., a corporation of New York.


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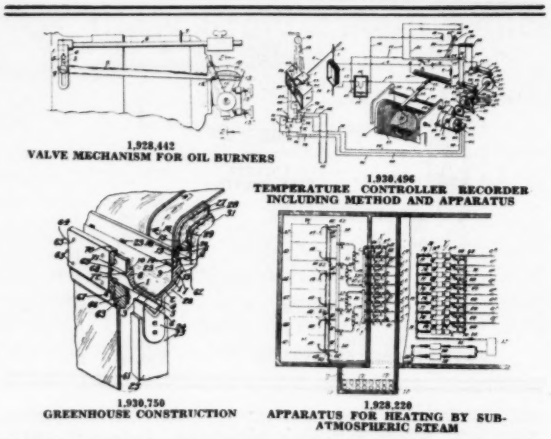
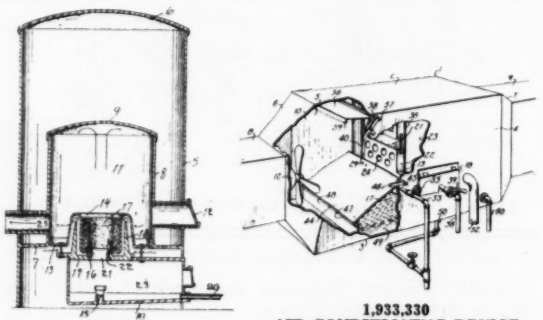



1,928,220. Apparatus for Heating by Sub-Atmospheric Steam. Clayton A. Dunham, Glencoe, Ill., assignor to C. A. Dunham Company, Marshalltown, Iowa.

1,933,146. Burner. Harry C. Little, San Rafael, Calif.




1,933,330. Air Conditioning Device. Willard M. Johnson, Kansas City, Mo., assignor to Conditionaire Company, Kansas City, Mo., a corporation.

# Code—

(Continued from page 38)

of this Code, except as herein provided, apply within this Division with the same force and effect as if set forth herein in full.

### ARTICLE IX—REVIEW OF ACTS OF CODE AUTHORITIES

If the Administrator shall determine that any action of the Divisional Code Authority or any agency thereof may be unfair or unjust or contrary to the public interest, the Administrator may require that such action be suspended to afford an opportunity for investigation of the merits of such action and further consideration by the Divisional Code Authority or agency pending final action which shall not be effective unless the Administrator approves or unless he shall fail to disapprove after thirty days' notice to him of intention to proceed with such action in its original or modified form.

### CHAPTER X. EFFECTIVE DATE

The Chapter shall become effective on the twentieth (20th) day after its approval by the President.

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ESTABLISHED MANUFACTURER OF cast iron, malleable, and brass fittings wishes commission representation in New England states; man well acquainted with plumbing and heating jobbing trade; state age, business address, lines now carried, and present territory covered. Address Key 967, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Ill.

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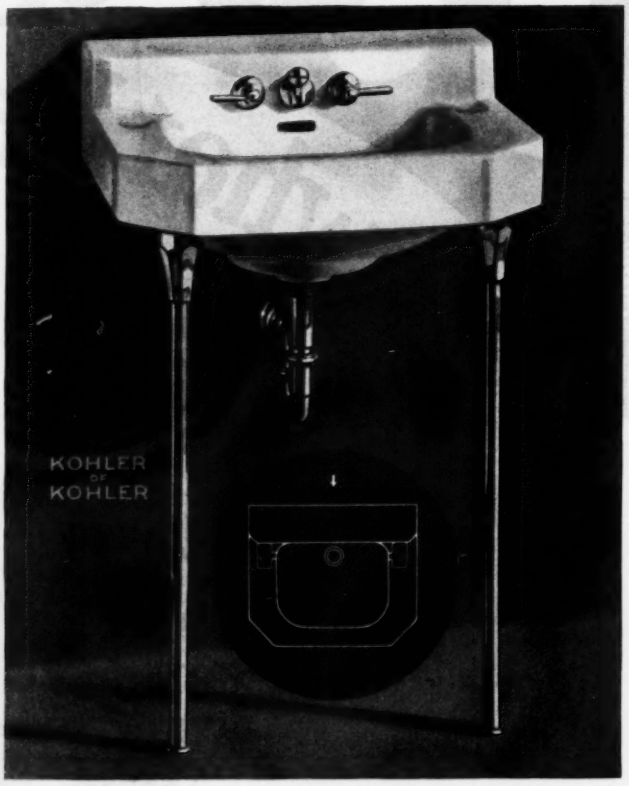


*Diagram shows 98 sq. inches extra space*

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